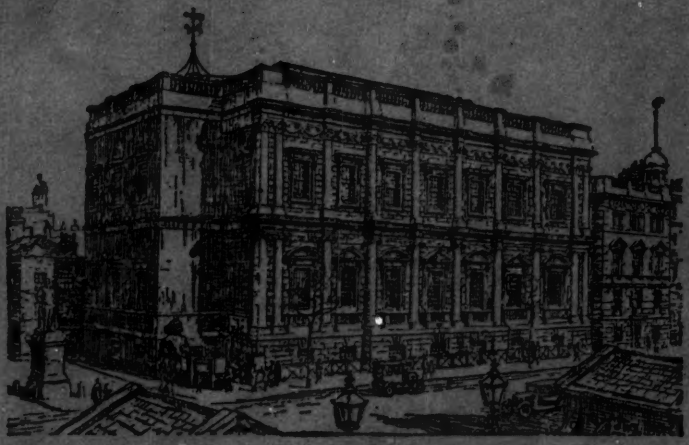
FEBRUARY, 1946

JOURNAL



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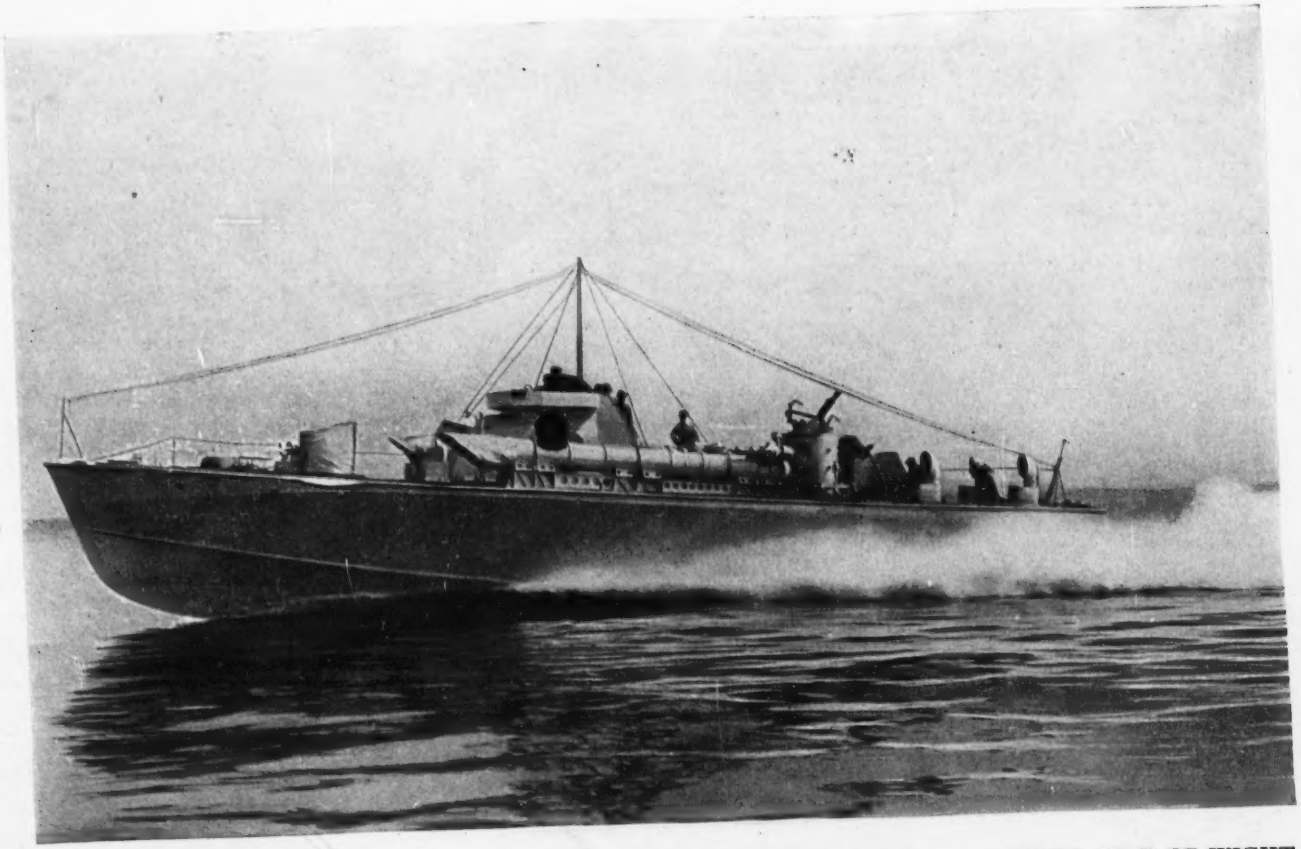

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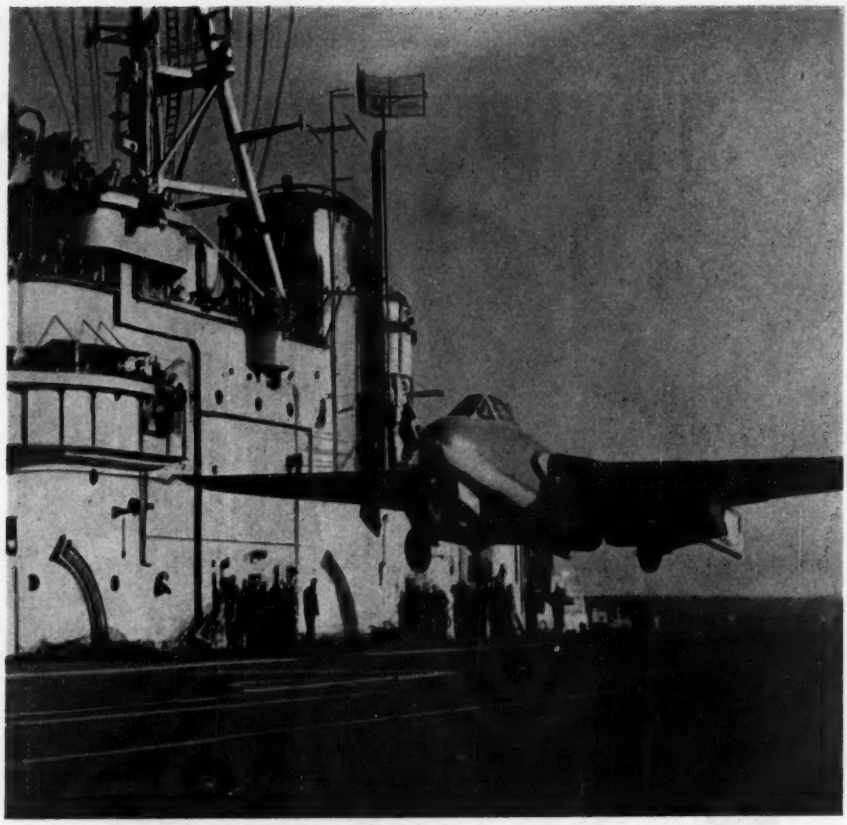

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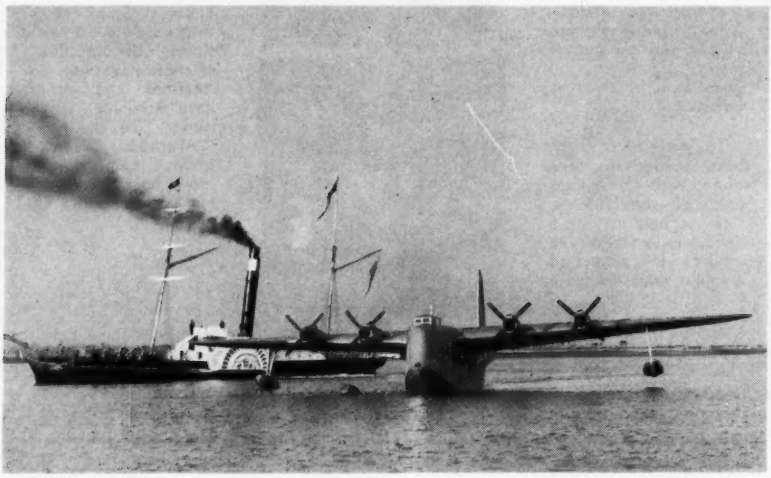

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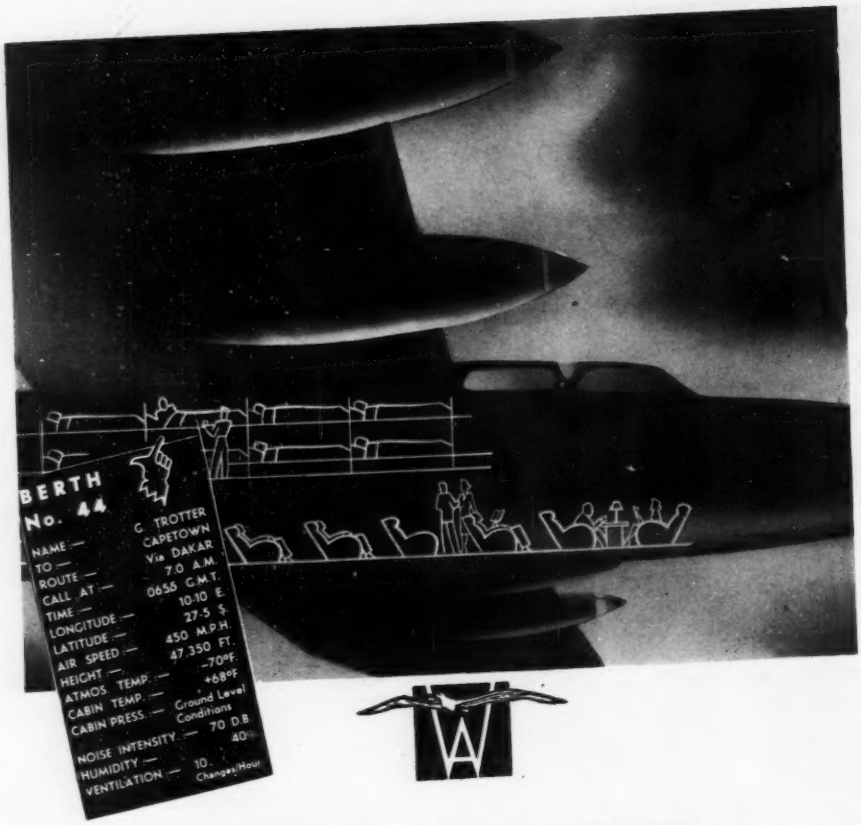

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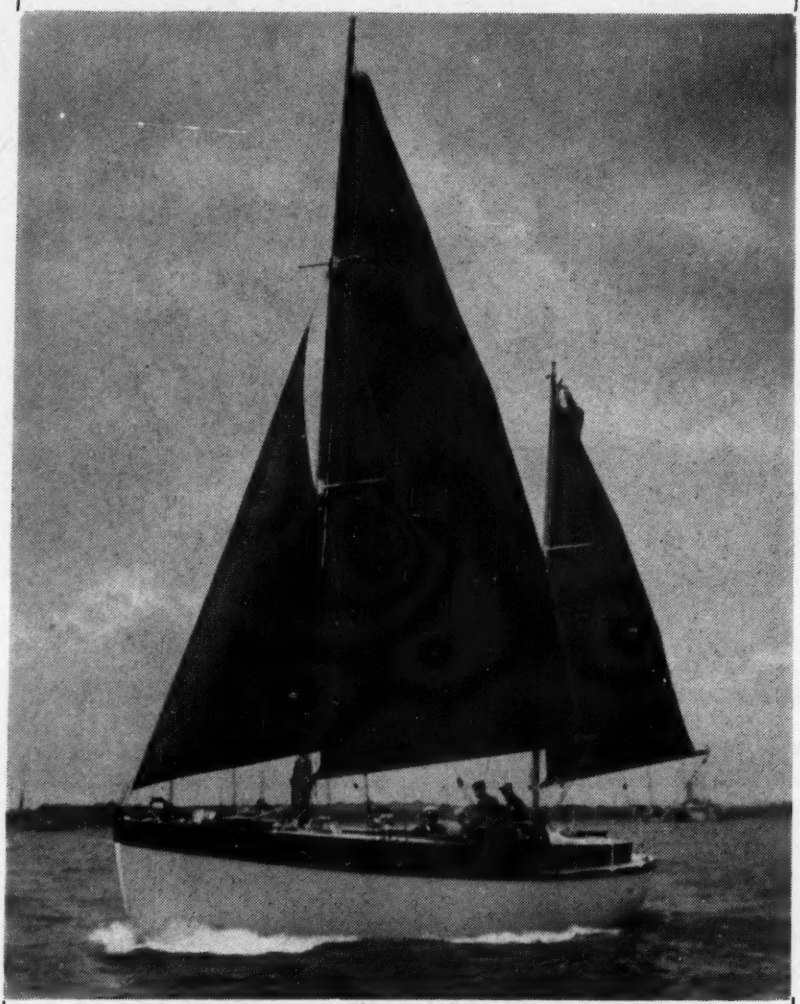

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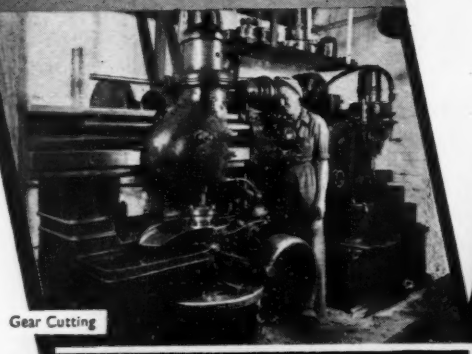

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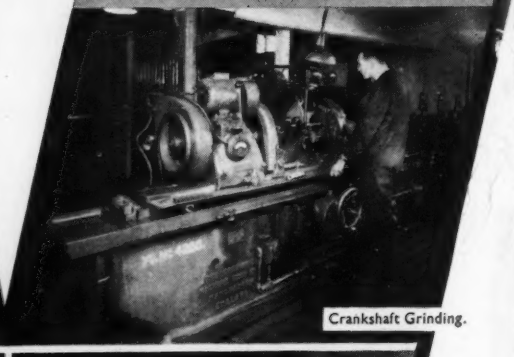

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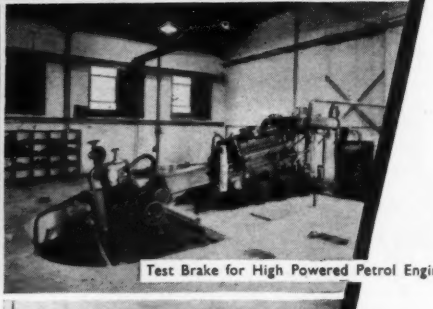

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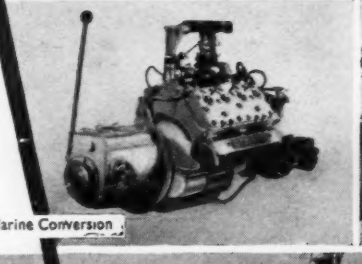

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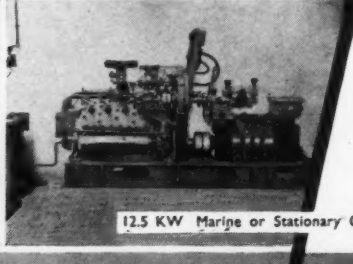

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SECRETARY'S NOTES

February, 1946.

ANNIVERSARY MEETING

The Anniversary Meeting will be held at 3 p.m. on Tuesday, 5th March, 1946. The Council will present their Annual Report and Accounts, and there will be an election to fill the vacancies on the Council. Copies of the Annual Report and Accounts for 1945 can be obtained on application to the Secretary.

VICTORY PARADE

Applications for seats to witness the Victory Parade from the Institution can now be received.

In accordance with Standing Orders, not more than three tickets (including his own) can be issued to any one Member. If necessary, accommodation will be balloted for.

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Representative Members

Major-General L. O. Lyne, C.B., D.S.O., has succeeded Major-General J. S. Steele. C.B., D.S.O., M.C., on taking up the appointment of Director of Staff Duties.

Ex-Officio Members

Air Vice-Marshal A. P. M. Sanders, C.B., C.B.E., has accepted the invitation of the Council to become an ex-officio Member of the Council on taking up the appointment of Commandant of the Royal Air Force Staff College.

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The following officers joined the Institution during the period 16th November, 1945, to 6th February, 1946:—

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Lieutenant R. B. Whatley, R.N.
Colonel F. H. Smith, Royal Marines.
Captain J. D. E. FitzGerald, Royal Marines.

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Colonel J. A. Barham, O.B.E., The Royal Fusiliers.
Lieutenant-Colonel D. Ross, O.B.E., Royal Engineers.
Leiutenant-Colonel F. R. Sedgwick, C.M.G., D.S.O., late Royal Artillery.
Lieutenant-Colonel J. H. Cubbon, O.B.E., The 22nd (Cheshire) Regiment.
Captain D. E. Johnston, The Royal Scots, 1st Commando Brigade.
Major D. M. Shean, The East Yorkshire Regiment.
Major E. R. D. Palmer, M.C., Royal Artillery.
Major A. S. Railton, M.C., The South Staffordshire Regiment.

Captain M. A. Kerr, 1st Punjab Regiment, Indian Army.
Major F. G. Caldwell, M.B.E., M.C., Royal Engineers.
Major R. N. B. Campbell, D.S.O., O.B.E., Indian Army.
Captain W. Dickson, Commanding George Watson's College J.T.C.
Lieutenant-Colonel W. F. Harling, T.D., Marlborough College J.T.C.
Captain E. H. Leschallas, The Loyal Regiment.
Lieutenant R. A. Macleod, T.A.R.O., Army Cadet Force.
Major P. H. Pilditch, Royal Artillery (T.A.)
Brigadier S. N. Shoosmith, D.S.O., O.B.E., Royal Artillery.
Major R. S. Streatfeild, M.C., Royal Artillery.
Lieutenant-Colonel L. J. Wood, The Dorsetshire Regiment.
Brigadier E. G. Woods, D.S.O., M.B.E., Indian Army.
Captain R. St. G. G. Bartelot, Royal Artillery.
Captain C. R. Burvill, Home Guard, 58th Surrey Battalion.
2nd Lieutenant J. G. A. S. Clendenin, Scots Guards.
Captain Harry Clive, Royal Signals.
Captain J. E. B. Conder, M.C., The Essex Regiment, attached 5th Battalion The Hampshire Regiment.
Major G. R. Kewley, Royal Artillery.
Major A. M. St. L. R. Murray, Royal Artillery.
Major-General O. L. Roberts, C.B.E., D.S.O., B.A.
Lieutenant-Colonel K. H. Bruce, D.S.O., late The Gordon Highlanders.
Captain F. P. Davidson, 10th Canadian Armoured Regiment.
Captain M. W. Chapman, 2/15th Punjab Regiment, Indian Army.
Lieutenant-Colonel A. G. Davidson, The Devonshire Regiment.
Lieutenant-Colonel L. G. Flanders, O.B.E., Royal Artillery.
Captain W. M. Fowler, The Duke of Cornwall's Light Infantry.
Lieutenant-Colonel F. C. Hitchcock, M.C., late The Prince of Wales's Leinster Regiment.
Major-General A. H. Hornby, C.B., C.B.E., M.C.
2nd Lieutenant G. H. Joyner, T.A.R.O., Army Cadet Force.
Major A. G. D. Palmer, M.C., The Rifle Brigade.
Captain R. W. L. Thrasher, T.A., Commanding Rutlish School J.T.C.
Major S. T. Bryden, 11th Berkshire Home Guard, late Captain 9th Durham Light Infantry.
Captain Arthur FitzGerald, Irish Guards (retired).
Major K. W. Grimsley, The Royal Warwickshire Regiment.
Major D. J. R. Moore, 1st K.G.V's.O. Gurkha Rifles, Indian Army.
Captain D. H. A. Stride, Royal Artillery.
Lieutenant-Colonel S. C. W. Disney, O.B.E., M.C., T.D., Pioneer Corps (late The Lincolnshire Regiment).
Major G. Adcock, 14th The Durham Light Infantry.
Major A. W. Cowgill, M.B.E., R.E.M.E.
Captain W. N. J. Pitt, Royal Artillery.
Lieutenant-Colonel W. L. Beales, The Royal Inniskilling Fusiliers.
Lieutenant-Colonel I. R. B. Bond, O.B.E., M.C., The Suffolk Regiment.
Lieutenant K. I. E. Johnson, The Parachute Regiment.
Colonel A. Lethbridge, C.B.E., D.L., 4/12th Frontier Force Regiment (Sikhs).
Major A. F. Dobbs, M.C., Indian Army.
Major Sir Charles H. F. Maclean, Bart., Scots Guards.
Colonel C. P. Stacey, O.B.E., Canadian Army.
Major G. Tylden, E.D., Union of South Africa Defence Force.
Major R. L. Broom, M.C., Royal Engineers.
Major A. J. A. Arengo-Jones, The Gloucestershire Regiment.
Lieutenant-Colonel H. S. Dean, M.C., The Royal Ulster Rifles.
Lieutenant-Colonel K. B. Stanley, M.B.E., 4/7th Royal Dragoon Guards.

Lieutenant-Colonel R. C. Bingham, D.S.O., late Coldstream Guards.
Lieutenant-Colonel R. Brickman, D.S.O., The Cameronians (Scottish Rifles).
Major G. L. Green, The Durham Light Infantry.
Cadet Wm. Utili, University of London S.T.C.
Cadet S. L. P. Feron, University of London S.T.C.
Major J. H. G. Black, The Argyll and Sutherland Highlanders.
Major H. J. Jackson, M.B.E., T.D., H.A.C.
Lieutenant N. C. B. Cleveley, Royal Signals.
Lieutenant-Colonel W. E. Beazley, C.I.E., M.C., Indian Army.
Major O. P. Beeman, Royal Engineers.

ROYAL AIR FORCE

Group Captain G. A. V. Clayton, D.F.C., R.A.F.
Wing Commander Colin Scragg, M.B.E., A.F.C., R.A.F.
Air Commodore The Right Hon. Baron Ventry, A.A.F.
Air Commodore K. B. B. Cross, C.B.E., D.S.O., D.F.C.
Wing Commander C. K. Bonner, R.A.F.
Wing Commander R. J. Abrahams, R.A.F.
Group Captain R. E. Beeny, O.B.E., R.A.F.
Wing Commander J. H. Iremonger, D.F.C., R.A.F.
Flying Officer A. E. Oliver, late R.A.F.V.R. (A. & S.D.)
Squadron Leader D. C. Furse, D.F.C., R.A.F.
Air Marshal Sir Leonard Slatter, K.B.E., C.B., D.S.C., D.F.C.
Flight Lieutenant M. J. B. Cole, D.F.C., R.A.F.
Wing Commander A. L. Winskill, D.F.C., R.A.F.
Group Captain F. R. Carey, D.F.C., A.F.C., D.F.M., R.A.F.
Pilot Officer E. E. Davies, R.A.F.V.R.
Wing Commander R. R. Fairweather, R.A.F.
Group Captain R. C. Hockey, D.S.O., D.F.C., R.A.F.
Group Captain P. H. Holmes, O.B.E., R.A.F.
Wing Commander A. K. Passmore, D.F.C., R.A.F.
Flight Lieutenant G. H. M. Standring, late R.A.F.V.R.
Wing Commander E. L. A. Walter, D.F.C., A.F.C., R.A.F.
Air Commodore W. R. Worstall, O.B.E.
Squadron Leader E. W. Davis, M.B.E., R.A.F.
Flight Lieutenant J. D. Lane, D.F.C., R.A.F.V.R.
Group Captain H. W. Marlow, O.B.E., A.F.C., R.A.F.
Group Captain K. A. Meek, M.B.E., R.A.F.
Wing Commander G. D. Stephenson, R.A.F.
Group Captain A. V. R. Johnstone, D.F.C., R.A.F.
Wing Commander W. Hoy, D.F.C., R.A.F.
Wing Commander M. M. Kane, M.B.E., R.A.F.
Squadron Leader D. Clive, R.A.F.
Air Vice-Marshal C. B. Cooke, C.B., C.B.E.
Wing Commander M. D. Crichton, R.A.F.
Squadron Leader H. P. Eustace, D.S.M., R.A.F.
Squadron Leader W. D. Hart, R.A.F.V.R.
Group Captain W. P. G. Pretty, O.B.E., R.A.F.
Group Captain A. H. Donaldson, D.S.O., D.F.C., A.F.C., R.A.F.
Group Captain H. J. Wilson, A.F.C., R.A.F.
Air Commodore J. F. Titmas, C.B.E.
Squadron Leader D. O. Cunliffe, D.F.C., R.A.F.
Group Officer C. Woodhead, W.A.A.F.
Air Commodore A. H. Wheeler, O.B.E.
Group Captain J. G. Hawtrey, R.A.F.

COVENANTED SUBSCRIPTIONS

The Council hope that many more Members will support the Scheme for Covenanted Subscriptions, details of which have been circulated to all Members.

This materially assists the Institution because it enables Income Tax at the full current rate to be reclaimed on each subscription.

To date, 494 Annual and 61 Life Members have signed the necessary Deeds.

Any Member who has not received his copy of the Scheme or who requires new forms is requested to communicate with the Secretary.

R.U.S.I. LIAISON OFFICERS

With the object of making the facilities afforded by membership of the Institution better known to the Services, the Council have invited the principal Commands at Home and Overseas to nominate Liaison Officers, and practically all from whom replies have so far been received have been in favour of this scheme. Meetings of these Liaison Officers, at which the Secretary of the Institution presided, have taken place on three occasions recently and proved most successful.

It is also hoped that the Liaison Officers will be able to suggest, from time to time, ways in which the Institution can be of greater value to the serving officer.

Liaison Officers have been provided with Particulars of the Institution and forms to enable them to enrol members without further formality.

The following is a list of officers who have been nominated as Liaison Officers and the Commands or Establishments they represent :—

NAVY

Liaison Officer	*Representing*
Captain H. A. Traill, O.B.E., R.N.	Admiral (Air)
Commander P. J. Cowell, D.S.C., R.N.	Admiral (Submarines)
Commander F. Gregory-Smith, D.S.O., D.S.C., R.N. ...	Combined Operations Headquarters
Commander T. Yeoman, O.B.E., R.N.	C.-in-C. Rosyth
Lieutenant-Commander A. H. Ayres, R.N.R.	R.N.C. Greenwich
Lieutenant-Commander R. C. P. Wainwright, D.S.C., R.N.	H.M.S. " Excellent "
Lieutenant-Commander A. Gray, D.S.O., R.N.	H.M.S. " Vernon "
Lieutenant-Commander P. W. W. Graham, R.N. ...	H.M.S. " Mercury "
Lieutenant-Commander A. J. R. White, D.S.C., R.N.	R.N. Barracks, Portsmouth
Lieutenant-Commander L. J. H. Gamble, D.S.C., R.N....	R.N. Barracks, Chatham
Headmaster Lieutenant-Commander H. H. Boddy ...	R.N. Barracks, Devonport
Major R. R. G. Hoare, R.M	R.M. Barracks, Chatham
Captain C. E. Boothby, R.M.	R.M. Barracks, Eastney (Porstmouth)
Captain P. L. Mackay, R.M.	R.M. Barracks, Plymouth
Captain T. N. Congdon, R.M.	R.M. Depot, Deal
Captain J. E. Day, R.M.	R.M. Commando Group (Petworth)

OVERSEAS

Lieutenant-Colonel R. F. Cornwall, O.B.E., R.M. ...	C.-in-C. Home Fleet

ARMY

Major-General A. Hornby, C.B., C.B.E., M.C.	A.A. Command
Lieutenant-Colonel E. Brickman, D.S.O.	Eastern Command
Lieutenant-Colonel J. A. W. Ballard, D.S.O., M.B.E. ...	Northern Command

Lieutenant-Colonel W. D. Ponting	Scottish Command
Lieutenant-Colonel R. C. Cooney, D.S.O., O.B.E. ...	Southern Command
Lieutenant-Colonel A. G. Davidson	Western Command
Major P. W. Marsham, M.B.E.	London District
Major A. Arengo-Jones	Northern Ireland District

OVERSEAS

Major P. Q. Logan	B.A.O.R.

R.A.F.

Air Commodore H. Eeles, C.B.E.	Fighter Command
Group Captain G. A. V. Clayton. D.F.C	Coastal Command
Wing Commander D. H. Thomas, D.S.O., D.F.M. ...	Bomber Command
Wing Commander C. F. Atkinson	Flying Training Command
Wing Commander L. Mathias	Technical Training Command
Wing Commander C. Scragg, M.B.E., A.F.C.	Transport Command
Group Officer C. M. McAlery, O.B.E., W.A.A.F. ...	Maintenance Command

OVERSEAS

Air Commodore A. H. Wheeler, O.B.E.	India Command
Air Commodore J. R. Whiteley, D.S.O., A.F.C.	South East Asia Air Command
Wing Commander P. W. Pye	R.A.F. Staff College M.E.D.M.E.

TRENCH GASCOIGNE PRIZE ESSAY COMPETITION, 1945

The Council having received the report of the referees decided that none of the three essays submitted for the competition is up to the standard which would warrant the award of the prize. A consolation prize of ten guineas has, however, been awarded to Lieutenant-Colonel R. M. Hall for his essay.

TRENCH GASCOIGNE PRIZE ESSAY COMPETITION, 1946

Subject

The following subject has been selected for the Trench Gascoigne Prize Essay Competition 1946 :—

" How can the lessons learnt from the development of the Services in organization and technique since 1939 be applied most efficiently to the solution of Imperial Defence problems ? "

JOURNAL

Request for Back Numbers.—The Editor will be grateful for any copies of the Journal for February, May and November, 1939 ; February, May and August, 1941 ; and November and August, 1942, which Members may have finished with, in order to meet applications for these numbers.

CHANGES OF ADDRESS

Members are particularly requested to notify any change of address which will affect the dispatch of the Journals.

MUSEUM

Closing for Restoration and Re-Organization.—The Museum will be closed from 25th February to the 30th March to enable the Ministry of Works to make good war damage and commence the work of replacing the Rubens ceiling. The opportunity will be taken to restore the naval exhibits and ship models in the Banqueting Hall and it is hoped to re-open the Crypt fully soon afterwards.

DIORAMA OF THE NORMANDY LANDING.—Through the generosity of Mr. Otto Gottstein the Institution is acquiring another historic diorama. This will depict D-Day on the Normandy beaches and will be on view when the Museum re-opens for the Easter holidays. This series of dioramas will then cover 2,000 years of British military history.

ADDITIONS TO THE MUSEUM

The following are some of the more important additions to the Museum received during the last quarter:—

Plate carried on the car of Field-Marshal the Hon. Sir Harold Alexander, G.C.B., C.S.I., D.S.O., M.C.

Given by Field-Marshal the Hon Sir Harold R. L. G. Alexander, G.C.B., C.S.I., D.S.O., M.C.

Flying Cap used by Air Chief Marshal Lord Dowding, G.C.B., G.C.V.O., C.M.G.

Given by Air Chief Marshal Lord Dowding, G.C.B., G.C.V.O., C.M.G.

Wireless Aerial and Goggles used by Sergeant John Hannah, V.C.

Given by Group Captain G. Thripp, R.A.F.

Dress Sword of a Nazi Luftwaffe Officer. This pattern was designed by Reichsmarshal Goering.

Given by Brigadier F. Young, D.S.O., M.C.

Model of a Bristol " Beaufighter " aircraft.

Given by the Bristol Aeroplane Company.

Model of a " Corsair " aircraft.

Given by the Admiralty.

Ashtray used by Marshal of the Royal Air Force Sir Arthur Harris, G.C.B., O.B.E., A.F.C. at his headquarters of Bomber Command.

Given by Marshal of the Royal Air Force Sir Arthur Harris, G.C.B., O.B.E., A.F.C.

Full Dress uniform of a Lieutenant of the Royal Naval Artillery Volunteers c.1890.

Given by Major R. Davey.

Model of the German Armoured Ship " Lutzow " (ex " Deutschsland ").
German Magnetic Mine Firing Units M.1 and M.3.

Given by the Admiralty.

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THE ALLIED NAVAL COMMANDER EXPEDITIONARY FORCE ADMIRAL SIR BERTRAM RAMSEY, K.C.B., K.B.E., M.V.O., AT SEA ON 'D' DAY - 6th JUNE, 1944.

THE JOURNAL
of the
Royal United Service Institution

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[Authors alone are responsible for the contents of their respective Papers. All communications, except those for perusal by the Editor only, should be addressed to the Secretary, Royal United Service Institution.]

THE NAVY'S PART IN THE VICTORY IN EUROPE

By REAR-ADMIRAL G. E. CREASY, C.B., C.B.E., D.S.O., M.V.O.

On Wednesday, 5th December, 1945

ADMIRAL OF THE FLEET LORD CUNNINGHAM, K.T., G.C.B., D.S.O. in the Chair.

THE CHAIRMAN: Gentlemen, I will not waste your time by introducing the Lecturer, who I am sure is well known to you, but I will ask him to get on with his lecture at once.

LECTURE

I AM very conscious that I stand here to-day in place of a better man. It was indeed tragic that an aircraft accident should have cost Admiral Sir Bertram Ramsay his life in the opening days of this year of victory—the victory that he had done so much to achieve. One of the many sad results of that accident is that it has deprived you of the chance of hearing from his own lips the story of the naval side of the Invasion of Europe and that it is left to me, who was his Chief of Staff, to do my best to tell his story.

I did not choose the title of my lecture and it is a slight misnomer in that I am confining myself to the naval aspect of the Invasion of France and of the subsequent operations on the Continent. I make no attempt to describe the many other contributions made by the Navy to the Victory in Europe. That would entail describing all the steps taken to allow our own ships to pass on the seas upon their lawful occasions whilst denying the use of the sea to the enemy.

PLANNING THE INVASION

I intend to give you an account of the development of the Plan of the Invasion and outline some of the more important details of the Plan before passing on to the actual Invasion operations and finally touching on the subsequent developments which culminated in Victory in Europe.

Let me at the outset emphasize with all the power at my command that the Invasion of Europe was a Combined Operation carried out under the Supreme Command of General Eisenhower by the combined forces of the British Commonwealth and of the United States. My task this afternoon is to describe the naval side of that undertaking and if in so doing I give any impression that naval interests in any way at any time predominated I make it clear in advance that this was not the case. It was in fact the spirit of unselfish co-operation between all Services and

nationalities that was primarily responsible for success. From the date of his arrival the Supreme Commander was resolute in his determination that no one Service or nation should be allowed to dictate or dominate and that we should work as one team, and it was in this spirit of team work that the operation was planned and executed.

This history of the operation dates back to the Casablanca Conference of January, 1943, when the Combined Chiefs of Staff ordered that plans should be made for the Invasion of Europe in May, 1944. In fact, administrative planning had been started as far back as May 1942, when a British planning staff began the provision of long term shore facilities of every type stretching from The Wash to Land's End. Casablanca gave us an outline of the military and air forces that would be made available and an allocation of landing ships and landing craft on which we could plan. On this basis a combined British-American planning staff got to work in April 1943. This staff was headed by a British General—Lieut.-General Morgan, who was appointed as Chief of Staff to the Supreme Allied Commander designate, and was known as COSSAC. This staff, which I joined in August 1943, prepared the original Invasion plan.

It is not unfair to say that all the world knew by this time that we were inevitably bound to invade Europe sooner or later. The only unknowns were "Where," "How" and "When." As far as "When" was concerned our orders from the Combined Chiefs gave us the approximate date and the problem before us was to decide "Where" and "How." The choice of the Bay of the Seine as the "Where" was primarily based on the strength of the German defences. Successful invasion must normally depend on the early seizure of a port through which the vast supplies of a modern army can be passed. This self-evident fact was as obvious to the enemy as to ourselves and, wherever suitable ports were to be found, there the enemy coast defences grew thickest and most powerful. The West coast and the Biscayan ports were ruled out by the prevailing sea and weather conditions and by the difficulties of flying adequate fighter protection over such long distances. From the point of view of fighter protection and of the advantages of a short haul, the Pas de Calais area suggested itself as the obvious point of attack, but here the German coast defences were at their thickest and heaviest. The flat and shelving Dutch and Danish beaches were possibilities, but they too were dismissed as bad landing beaches, heavily protected and with a background ill-adapted for subsequent military operations.

The Bay of the Seine was relatively ill-defended, primarily because it contained no major port. It was therefore chosen as the point of attack, accepting the fact that the Army would have to be supplied over the open beaches of the Normandy Coast for a prolonged period because, even if early military success led to the capture of Cherbourg, this port with its bad land communications down the narrow Cotentin Peninsula could only hope to meet a fraction of the Army's supply problem.

So much for the choice of "Where." As regards "How," the main problem to be answered was whether to assault by day or to assault by night. A daylight assault was chosen and this decision was based on the belief that the Continental beaches were so heavily defended and mined that a night assault would be decimated by blind fire and by beach mining before it had a chance to seize a beachhead. It was believed that to tackle such formidable opposition the only hope was to bludgeon the way ashore and bring sufficient fire power to bear to devastate the opposition. This called not only for great volume of gunfire but for great accuracy, and to achieve

this accuracy it was believed that daylight was essential. On the other hand, the assault would have to be so timed that the maximum possible of the approach would be covered by darkness.

The original COSSAC plan was based on the following broad foundations. Three Divisions, each with two Brigades up and one in Reserve, were to assault simultaneously between the Rivers Orne and Vire. Two further Divisions, tactically mounted in Landing Craft, were to follow up as an immediate Reserve. The Western Assault was to be made by forces of the United States whilst British forces were to make the two Eastern Assaults.

In submitting this plan for the approval of the Combined Chiefs of Staff at the Quebec Conference of August 1943, three important provisos were made as being essential to success :—

(*a*) The German must be so engaged by other forces on the Continent that the build-up of his counter operations in France could not exceed a certain stipulated maximum, roughly equivalent to the rate at which we could land our reserves.

(*b*) That Air operations, starting at once, must be so directed that by the time the Invasion was to be launched we should have reduced the Luftwaffe and especially the German fighter forces, to a low degree of efficiency.

(*c*) That, in view of the absence of a major port and the possible limitations to our build-up imposed by weather conditions on open beaches, some form of artificial shelter to cover at least some part of these beaches should be provided.

The COSSAC plan received broad covering approval in August, 1943, and from this time preparations began to go steadily forward. We already had the nucleus of one British Assault Force in being in the Portsmouth Area which had started training with the 3rd Canadian Division, but this force had to be expanded threefold. The United States Assault Force had to be formed from the beginning and this force was to assemble in the Plymouth area. The other British Assault Force, which also had to start from scratch, was to form up and train in Scottish waters in the Moray Firth. The two follow-up forces, one British and one American, were to be based on the East Coast and Bristol Channel respectively.

It was clear from the start that a night passage with a vast number of ships and craft moving through a limited area would involve many tricky problems. When on top of this they would be launched in a daylight assault to a complicated pre-arranged programme from which no departure could be allowed, it was obvious that a precision of manoeuvre and skill of seamanship would be required which would call for intensive training. Both British and American landing craft were manned by comparatively amateur sailors and they had to acquire the maximum of training in the time available. For this purpose it was necessary to provide training areas in which the Navy could land the Army supported by the Air Force in conditions as realistic as possible, where gunfire and bombing would take place and within a reasonable distance of the assembly area of the forces. At Portsmouth we were lucky in having a suitable area at Studland Bay which had already been cleared for military practices. In Scotland areas were found without too much difficulty in the Moray Firth where minimum inconveniences were caused to the local population. But in the West Country we faced a most difficult problem which

was only solved in the end by evacuating the farms and villages of a wide area behind Slapton Sands to give the American assault forces the requisite training.

It may be said that, in fact, the Invasion of Europe operations started with the Quebec Conference, since from that time onwards air strategy began to be directed on the steady reduction of German fighter strength. In late August, 1943, an exercise was staged in which British landing craft of the Portsmouth Force made a feint in the general direction of the Pas de Calais area with the idea that this would bring a swarm of German aircraft into the air for our fighters to knock down. In this respect the enemy failed to oblige and the operation was a failure, but as an exercise in mustering, embarking and sailing military forces under naval protection in co-operation with the R.A.F. it was a great success. From this date onwards Combined Exercises of this nature became a regular routine.

Whilst things were thus beginning to take shape you will appreciate that we had at this time one great difficulty and that was the absence of any decision about the command of the operation. The COSSAC Staff at this stage was, indeed, a body without a head and all our work went forward with the unhappy thought behind it that the Supreme Commander when he arrived, or, perhaps the Naval, Military and Air Force Commanders, when they took over, might entirely disagree with all the work that had been and was being done.

From a naval angle our anxieties were relieved when Admiral Sir Bertram Ramsay was appointed as the Allied Naval Commander-in-Chief on the 25th October, 1943, and a further step forward was made shortly after this with the arrival of Rear-Admiral Kirk, who was to be the Naval Commander of the Western Task Force under whom would work all the naval forces of the United States taking part in the operation.

From this point our Naval Plans could go forward with assurance, but here again we were faced with the trouble that they were perforce tied to the General Plans, and these were still provisional. To launch the Invasion in May we decided that detailed combined planning must start on the 15th December, and this was actually done even though we suspected that the Military Staff with which we were working would not be that charged with the conduct of the operation, and that no Supreme Commander had yet been nominated. With the end of the year, however, came the end of our troubles and the appointment of General Eisenhower as Supreme Commander, with General Sir Bernard Montgomery as Commander-in-Chief, 21st Army Group. General Eisenhower's arrival was delayed because he had first to visit the United States, but by the beginning of 1944 we had General Montgomery and General Bedell Smith—Chief of Staff to the Supreme Commander, working in London. The Supreme Commander had already delegated to General Montgomery the immediate control of all military operations, British and American, on the Continent up to the point at which the U.S. Army Group Headquarters was established in France. At about this time the appointment of Air Chief Marshal Sir Trafford Leigh-Mallory as the Allied Air Commander-in-Chief was also confirmed, and Air Chief Marshal Sir Arthur Tedder was appointed as Deputy Supreme Commander. Thus the full chain of command was settled, and we could see where we stood.

The new Command were not slow in voicing objections to the COSSAC plan. Briefly the complaint was that the initial blow was being delivered by insufficient forces on a front that was not sufficiently wide and that the capture of Cherbourg earlier than envisaged was an essential. So the plan was amended to include an assault by five divisions on a front that now included the base of the Cotentin

Peninsula, with the same two tactically-loaded Divisions as an immediate Follow-up Reserve.

It was very obvious that the naval lift at our disposal, which was just adequate to lift five divisions, could not be stretched to lift seven, even if the expedient of cutting down the vehicle strength of divisions was adopted. By postponing the date of the operation by a month we gained an extra month's Anglo-American production of landing craft but even so we could only partially meet our revised needs. The only source from which additional landing craft could be drawn was the Mediterranean, and clearly this would be not only at the expense of current operations in Italy but would also react on the original strategical plan wherein an assault was to be launched on the South Coast of France more or less simultaneously with the Channel Operation.

Such a change of grand strategy had to wait the approval of the Combined Chiefs of Staff which could not be expected quickly. The necessary detailed planning, however, had to start at once and we went ahead on the assumption that half the lift available in the Mediterranean would be allotted to the Channel in time for the operation.

We were now faced with the task of assembling and training five Assault Forces. It was clearly impossible to find any more training areas, so both American Forces shared the Slapton area and two British forces shared the Studland area. The final assembly of the five Assault Forces on the South Coast stretched the available berthing and maintenance facilities to the very limit, but everyone was determined to ram a quart into a pint pot, and so it was done, though it often looked as if we were going to overflow.

That has traced the bare skeleton on which the general plan grew and has given you an outline of both our achievements and our difficulties. The broad plan thus evolved was in fact the basis on which the assault was eventually launched, and no major change was made. The final approval to divert the Mediterranean lift to the Channel was not given until the 20th March, 1944, and we undoubtedly suffered much anxiety during the time that we were making detailed plans based on ships and landing craft not under our control. The decision when it came, although it was expected, took a great weight off our shoulders.

The Naval Chain of Command

As far as the actual Assault was concerned the Naval Command problem was simple. Under the Allied Naval Commander-in-Chief, whose short title was A.N.C.X.F., were Rear-Admiral Sir Philip Vian commanding the Eastern Task Force of British Forces and Rear-Admiral Alan Kirk, U.S. Navy, commanding the Western Task Force of American Forces. Both Task Force Commanders had under them Rear-Admirals or Commodores in command of each Assault Force or Follow-up Force. The Bombarding Squadrons had their own Flag Officers in Command.

A more difficult problem to settle was the demarcation of responsibility between A.N.C.X.F. and the Commanders-in-Chief of the Home Commands. This was solved by defining a limited area, which roughly covered the Bay of the Seine, for which A.N.C.X.F. was directly responsible and leaving the Commander-in-Chief of the Home Ports responsible for operations within their Commands. It was further decided that on a date shortly before the Invasion the Admiralty would turn over to A.N.C.X.F. the general responsibility for overall direction and co-ordination of all operations within the Channel.

The Softening of the Enemy's Coast Defences

You will remember that the decision to attack in daylight called for such a heavy scale of bombardment of the enemy coast defences as to dominate his resistance whilst the Army was landing. The plan allowed for this to be done in three ways. First, the enemy coast defence batteries were to be neutralised by air bombing before the landing was made, followed up by a period of bombardment by battleship, monitor and cruiser gunfire during the last stages before the touchdown. Secondly, a force of destroyers was to close the coast with each Assault force and bombard at close range the enemy pill-boxes and strong points commanding the actual beaches. A heavy air attack was also to be launched on the back of the beaches as the assault closed in. Thirdly and finally, each Assault Force was to contain its own fire power, and to this end new weapons were provided and a technique for their employment was developed, and they were trained simultaneously with the assault Forces. Such were the D.D. tanks, the S.P. artillery fire from L.C.T., the Centaur and Challenger Tanks mounted on platforms in L.C.T., and the use of rocket-carrying L.C.T. and bomb-throwing L.C.A.[1]

I do not intend to touch any further on this subject of naval bombardment as it has already been covered by another lecturer.[2] But I must add that the decision to bomb both the coast defence batteries and the beaches from the air involved considerable argument with the Army since they were naturally anxious to employ the bombers at this stage to deal with enemy reserves moving up to counter the assault. The Navy won the argument, however, and, in the event, Bomber Command aircraft were used to attack the batteries on the night preceding D-Day, whilst the whole weight of the 8th Air Force was flown against the beach defences in the early hours of the morning as the assault closed in.

Few points were more discussed than whether bombing of these batteries was justified during the last weeks before D-day, in the light of the danger to security involved. The decision was made that the Bay of the Seine batteries could only be bombed at this time as part of the general bombing policy of all batteries on the Continental coast, and for every ton of bombs dropped where we wanted it some four or five tons were dropped in the Pas de Calais or elsewhere to provide cover for our plans.

The Provision of Escort Forces

We had to allow for counter attack by the enemy with destroyers, U-boats, E-boats and auxiliary craft. It was, moreover, not impossible that he might even move cruisers or heavy ships into the Channel to repel the Invasion. This last prospect never loomed large in our minds, but a plan was in existence to move an adequate naval force to the East in the Channel to repel such an attack; if it came Northabout, we felt sure that the Commander-in-Chief of the Home Fleet would be only too happy to deal with it.

The real threats lay in the enemy U-boats and E-boats, and of these the E-boats were the more immediate, while the U-boats were the greatest potential threat. Counters to these were provided by a detailed and complicated mining plan which involved in its later stages the use of a new form of mine which we believed the enemy

[1] For description of the various types of landing craft mentioned in this lecture see Journal for May 1945, p. 212.

[2] See "Naval Bombardment," by Commander J. G. Hamilton, R.N., in the Journal for August, 1945, p. 343.

would be incapable of sweeping. But we could not rely only on mining for safety, and protection lay in the provision of adequate covering forces and of close escort to every convoy moving across the Channel. For a counter to the U-boats we were also able to rely on the provision of a considerable air effort by Coastal Command, and this was further backed by the employment of anti-submarine escort groups in the approaches to the Channel.

Under the original plan of a 3-Divisional assault our demand on the Admiralty for escort forces was a heavy one, and with the increase to a 5-Divisional assault it became heavier still. It was, however, after one or two awkward moments, generously and cheerfully met and, in the end, the forces involved included 93 destroyers, 15 sloops, 26 escort destroyers, 27 frigates and 71 corvettes. This was the price we had to pay for comparative safety against U-boat and E-boat attack.

Minesweeping

We were never in any doubt that minesweeping would present us with one of our biggest headaches. We knew from the start that we should have to sweep a passage through the old mid-Channel German minefield. This involved the simultaneous sweeping and buoying of ten parallel channels—the largest single minesweeping operation ever yet undertaken. The provision of the ten flotillas of Sweepers, all British, strained our resources to the very limit but somehow the Admiralty managed to meet our requirements. I think that in the later stages of planning the Admiralty must often have thought that A.N.C.X.F. and his staff were descended from the daughters of the horse leech in the Bible whose cry, you will remember, was "Give, give."

As D-day approached, intelligence indicated that the enemy was extending his use of defensive minefields off the French coast and this involved most complicated minesweeping plans for clearing areas for the deployment of our assault forces and for the bombarding ships to occupy. Further, at this stage the enemy increased his aircraft and E-boat minelaying activity in our own coastal waters and the problem of keeping our coastal channels swept was one that caused us keen anxiety. Happily the enemy confined his activity to moonless nights, whilst D-day was planned for full moonlight.

Security and Measures to Mislead the Enemy

From the outset it was accepted that the enemy must know, as did the whole world, that invasion would come. The vital information to keep from him was the place, the date and the means we would employ.

Time does not allow of any detailed description of what was done, but suffice it to say that both by artificial radio traffic, the use of dummy landing craft in East Coast harbours, and in every other way which imagination could evolve, the enemy was led to expect assault in the Pas de Calais area. Among these efforts to deceive the enemy I must also include a naval diversion employing light craft which was carried out on the night before D-day in the Straits of Dover in support of an air bombardment in the Pas de Calais area. These craft were intended to give a radar effect of a large number of ships. A similar diversion was also carried out on the same night in the Cap d'Antifer area to deceive the enemy over the width of the front on which we were assaulting and to tie down his reserves.

All these measures met with a truly astonishing success. Their success and indeed the success of the whole operation hinged entirely on the security in which

our plans were kept. When you think of the literally thousands of men and women who before the end had perforce to know details of the plan, it is little short of a miracle that no leakage ever took place. If you remember that the majority of these people were young women, you will never again claim that a woman is not to be trusted with a secret.

A security aspect that caused us great worry was the question of obtaining detailed particulars of the beaches on which we were to land and their approaches. Air photography gave us a wealth of information but we still wanted to know the off-shore soundings and the nature of the foundation of the beaches themselves. We carried out a series of reconnaissances between November, 1943, and January, 1944, during the dark moon period in each month and using light craft for the purpose. We planned to carry out further reconnaissances with midget submarines, and actually did one operation during which swimmers were landed to examine beaches. After this it was considered that the risks to security were too great, even though we had covered the original light craft operations by similar reconnaissances elsewhere on the enemy's coast.

"Mulberry" and "Pluto"

You will remember that one of the provisos of the original COSSAC plan was that some form of artificial shelter was an essential to success. The original intention was to provide one small artificial harbour by sinking blockships to form a breakwater. How this developed into the colossal undertaking known by the code name "Mulberry" has already been described in a lecture here[1] and I will not enlarge on it further beyond saying that shortage of tugs was one of our chief problems. We reduced the tug facilities of every harbour in the States and in this country to a bare minimum and still we never had enough tugs.

Time will not permit me either to do more than refer to Operation "Pluto"—the laying of pipe lines across the Channel to carry petrol, but this has been tolerably well described in the popular Press.

The Selection of H-Hour and D-Day

I have already indicated that we were planning for a daylight assault with a cross-Channel passage in full moonlight. The original intention was to land about three hours before the top of high water in order to give the maximum disembarkation on the rising tide without too great a distance for the initial assault to cover on the gunfire-swept beaches. Conditions of light and tide would only serve for three days in each full moon period.

We found, however, as the Spring passed, a new difficulty arising. Photographs of the beaches showed that the Germans were covering them with various forms of beach obstacles. Trials showed that the best way of tackling these was to land below them and clear them dryshod. This called for a landing shortly after low water but this in turn was affected by off-shore rocks in the approaches to one of the British beaches which did not cover sufficiently until about half-tide. In the end we had to compromise and accept the complication of different H-hours for the five beaches, the overall variation being 65 minutes.

These considerations gave us 5th June as the first possible D-day, with the 6th as a good alternative and the 7th as a rather poor one as there would be too much daylight between the final approach and the touchdown.

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[1] See "The Prefabricated Harbour" by Rear-Admiral H. Hickling C.B.E., D.S.O. in the Journal for August 1945, p. 271.

The Weather and Forecasting

We were never under any illusion that the Meteorologists would have grave difficulty in forecasting the weather for more than 48 hours ahead, and we believed that for all practical purposes 24 hours was about the normal limit for accuracy with our temperamental British climate. The strongest possible Meteorological team was built up and for many weeks before D-day we had exercises in forecasting the weather trend, since it was obvious that weather was going to play the most vital part in the whole operation.

The Twenty-four Hours Delay and its Effect

The Supreme Commander held his first meeting to discuss the weather forecast for D-day a.m. 1st June. We had previously had three weeks of perfect weather, but about this time it broke and the outlook was poor and steadily deteriorated during the next three days. The first Assault Force had to sail from the Falmouth area p.m. on 3rd June if D-day was to be on 5th June, and at a meeting we had that afternoon the Supreme Commander decided that, in view of the great advantages of assaulting on the first possible date, movements of the forces must proceed despite the unfavourable outlook.

At the next meeting at 4.15 a.m. the following morning—4th June, it was clear that the weather conditions predicted for the following day could not be accepted and the decision to postpone the operation by 24 hours was reluctantly made. By this time the majority of the American Assault Forces from the West Country were already at sea, and these Forces had to reverse their course and return to harbour punching into a nasty head sea and rising westerly wind on their way back.

Never were weather forecasts so anxiously studied as on 4th June. Conditions at first looked hopeless but, as the day passed, a ray of hope for an improvement in the weather began to be felt. This culminated at the historic meeting held by the Supreme Commander at 10.15 p.m. It was then he took the decision, having heard the advice of his three Commanders-in-Chief, to launch the Assault. We knew that the assault craft were fated to have a most uncomfortable passage in the stiff breeze that was still blowing from the westward in the Channel but we hoped for an improvement in the early hours of 6th June. Anxiety was felt over the ability of the American Assault Forces, after their pounding on 4th June, to reform and sail to programme time for the new date, but Rear-Admiral Kirk characteristically announced that his forces would be ready to sail punctually and, to their everlasting credit, they did so.

I doubt if any leader in history ever had a more fateful decision to take than General Eisenhower in giving the order to launch the assault. It is, I think, worth recalling the weather conditions prevailing on that night of 4th-5th June when that decision was made. It was still blowing half a gale from the West and the sky was ten-tenths low cloud. He knew and weighed all the risks and I am sure that posterity will give him full credit for his courage and resolution. Others could and did advise; the final responsibility was his alone.

THE ASSAULT

With the order "Go," the whole Coast of England from the Humber to the Bristol Channel sprang to life and activity, and upwards of 6,000 ships and craft of every shape, size and description started to move to the complicated programme laid down. Undoubtedly the area of greatest activity was at Spithead and in the

Solent where two Assault forces sailed Eastabout and one Westabout of the Isle of Wight.

As the whole vast Armada started to converge on and steam down the channels swept by the minesweepers just ahead of them, it became, slowly at first and then with steadily increasing certitude, more and more evident that we had achieved what we had scarcely dared to hope for—tactical surprise. Our leading minesweepers had, perforce, to be within sight of the coast of France before darkness fell on the night of 5th June and we had always believed that, from that time onwards, if we were lucky enough to get that far undetected, we should have to bludgeon our way ashore. But the unexpected happened, and it was not until the early hours of 6th June that the enemy began to realize that the great day was upon him.

I think it is still too early to say to what we owed this wonderful result. Probably it was due to a combination of factors, *e.g.*, the way the enemy was misled, and the success of our Air Force in defeating his air reconnaissance, but my own belief is that above all we had to thank the weather and the enemy's conviction that we would not launch an invasion in such conditions.

But if the weather thus contributed to the achievement of surprise, it also made the cross-Channel passage of the expedition a difficult and very uncomfortable business. With craft as small as many used for the Invasion and with loads as heavy as those that were embarked, trouble of some sort was inevitable in the prevailing conditions. As the night of 5th-6th June passed it became evident that the hoped-for improvement in the weather was not fully materializing and conditions were severe. A few of the landing craft foundered whilst others broke down. But with these few exceptions the Assault went forward in close compliance with the Plan, and this splendid result must be attributed to the dauntless spirit and skilful seamanship of those who manned the ships and craft.

To describe the progress of the Assault would require a long lecture devoted to that subject alone, so I must confine myself to saying that it went broadly according to plan whilst touching on a few points where divergence occurred.

Trouble was experienced with the D.D. tanks[1] in the bad weather. Some forces actually landed them on the beaches, others gave them a reduced distance to swim with which they successfully competed, whilst some, launched in the planned position, foundered and sank. The West-North-Westerly weather had piled the sea up in the Bay of the Seine and there was deeper water off the beaches than tidal predictions had led us to expect. This meant a reduction in the already short time to deal with the beach obstructions and the Teller mines attached to them before they were covered by the rising tide. These obstructions, combined with heavy weather, caused considerable damage to minor landing craft, but this damage usually happened on retracting after unloading men and vehicles.

Force "O," the Eastern American Assault Force, undoubtedly met the stiffest opposition and had the hardest battle to get ashore and to get established. On this beach the heavy bomber effort went astray and a determined enemy was present in strength. As a slight set-off to this, the Western American force achieved almost complete surprise, and, having a lee from the westerly weather, had easier going than the other forces. This force, however, assaulted across an offshore German minefield and suffered some mine casualties.

[1] A Sherman tank made to float by means of a water-proofed canvas screen, and fitted with a propeller driven by the tank engine through a duplex drive (D.D.).

On the Eastern Flank the enemy made his only naval attempt to interfere with the operations and sent out a force of torpedo-boats and trawlers. Torpedoes were fired from behind the smoke laid to screen this flotilla from the Le Havre batteries and one of our destroyers—a Norwegian, was hit and sunk, but the enemy was quickly repelled by the guns of the Bombarding Squadron.

By the evening of D-day it was clear that success had been achieved, and achieved at a fraction of the cost in casualties to what we had expected. What Philip of Spain had attempted to do and failed, what Napoleon had dreamed but hesitated to try, and what Hitler had planned but dared not risk, we had done. It was a great triumph of sea power.

THE BUILD-UP

We had always visualized our job under two main headings: the first, to put the Army ashore fighting fit, in the right place and at the right time; the second, to land reinforcements and stores to meet military requirements. Time will not permit any account of the vast and complicated convoy schedule worked out to put this programme into execution, but it can be fairly said that we kept to our promises and were never badly adrift. As an example of the scale of the work involved there were eight daily convoys outward bound—four to the British and four to the American area. On an average day during the first week the following ships and craft arrived off the Assault Area: 25 Liberty ships, 38 Coasters, 40 L.S.T., 75 L.C.T., 9 Personnel ships and 20 L.C.I.(L.)

One major departure from plan had to be made and, happily, was made with the most excellent results. We had been warned that any attempt to beach and dry out the L.S.T.'s would inevitably lead to breaking the backs of these invaluable ships, and we could not afford to risk them. So we planned to discharge them offshore by the use of Rhino ferries—big self-propelled rafts made up of American pontoons. Many of these broke down or broke up in tow and the survivors proved to be unhandy in the lop usually running off the beaches. In the resulting emergency L.S.T.'s had, perforce, to be beached and dried out and it was found that, contrary to the voice of the prophets and given reasonable care, this was perfectly practicable and it became the standard method of unloading these ships.

Similarly, coasters were dried out to discharge whilst M.T. ships either discharged into L.C.T.s or in favourable weather on to the Rhino ferries.

D+1 was a day of bad weather but it was followed by a week of improved conditions and things speeded up to such an extent that by D+9 half a million men, and 77,000 vehicles, had been landed. The millionth man landed on D+28.

DEFENCE OF THE ASSAULT AREA

For the immediate defence of the Assault Area both Task Force Commanders relied on a so-called static defence to cover the mass of ships and craft at anchor off the beaches. In the British area by night a line of minesweepers was anchored six miles offshore and parallel to the Coast with ships five cables apart. The Eastern flank was guarded by Support Landing Craft anchored one cable apart. To reinforce these ships there were 2 or 3 sub-divisions of destroyers on patrol to seaward and 2 or 3 divisions of M.T.B.'s stopped but under weigh and North-Eastward of the Eastern flank. This scheme of protection was designed to reduce mutual interference to a minimum and a generally similar scheme was employed in the American Area.

The enemy made many attempts to penetrate this defence both with torpedo boats and E-boats, but it proved its value and he had no success. It was later

equally successful in repelling attack by midget submarines and human torpedoes. The enemy was also considerably discouraged by a most successful heavy air attack on Le Havre launched by Bomber Command on D+8. This inflicted severe damage both on his light craft and their shore facilities. The cross-Channel routes were covered by destroyer and M.T.B. patrols operated from the Portsmouth Command, and these achieved remarkable success in routing enemy attacks. Some casualties inevitably there were, but whenever and wherever the enemy appeared he was fought and generally damaged and defeated.

The primary defence against air attack lay in the continuous Fighter protection flown over the Assault Area. Indeed rigid restrictions were imposed on gunfire from ships and craft. This afforded a very great measure of protection by day but was not so successful at night, and the enemy inflicted one surprise on us in the form of a new type of mine, practically unsweepable, which was dropped at night by aircraft. This caused a certain amount of damage to shipping.

As far as the U-boats were concerned the main defence was a distant one and we relied largely on the efforts of our surface ship hunting groups working in co-operation with Coastal Command in Channel soundings. Our trust was amply justified as the U-boats were severely harried and suffered heavy loss. They were so shaken by the time they reached the cross-Channel traffic that they never proved a serious menace.

THE GREAT GALE

With the slight improvement in weather conditions between D+1 and D+8 we had believed our troubles to be over, but we were very wrong, and the worst was to come. From that day, 14th June, onwards a steady deterioration set in, culminating on 19th June in a North-Easterly gale which came without warning and blew steadily for three days.

Some work continued in the British Mulberry at Arromanches, and the sunken blockships proved of inestimable value in giving some shelter to landing craft, but otherwise landing operations came to a standstill. When the gale eased we could count the cost and we found that at least 800 craft of all types were stranded, whilst the American Mulberry at St. Laurent was damaged beyond hope of repair. Over and above this we had lost the equivalent to three days' build-up. However, exceptional measures were taken and we gradually won back some part of our loss including the majority of the stranded landing craft which were successfully refloated at the next Spring tides. The loss of the American Mulberry was, moreover, to some extent offset by the capture of Cherbourg which fell to the American Army on 26th June, though in its shattered state it took some 90 days to bring the port into full working order again even with the amazing drive and enthusiasm that the Americans brought to bear on the work.

The passing of the three days gale did, however, really see an end to our troubles and thereafter the build-up settled down to a more or less routine operation of maintaining a steady stream of military and air force supplies.

SUBSEQUENT OPERATIONS

The progress of the land battle has been vividly described to you in Field-Marshal Montgomery's lecture and time will not allow me to do more than touch on the naval share in the progress of events.

With the rapid thrust towards the Low Countries, which delivered Antwerp

into our hands practically undamaged, the Naval Staff at once concentrated on the problem of opening up the Scheldt. Here was at last what we had longed for—a major port capable of competing in full with military requirements. But we were faced with the fact that we could not begin the big minesweeping operations to clear the River until the Army had cleared the enemy out of the coast defences covering the approaches to the River. The date of the operation was, therefore, dependent on the speed with which the Army advanced along the Coast, and it was not until the end of October that a combined operation could be staged to seize the island of Walcheren and to clear the Northern bank of the Scheldt.

A full description of this operation would, again, require a lecture to itself; moreover I would not be the man to give it, as I left A.N.C.X.F.in mid- September to take up my present appointment, and my knowledge of events has been gained only from a study of the reports. But this lecture would be incomplete without a brief account of the Walcheren landing.

The general plan was to clear the hinterland of Walcheren by military operations and then to assault the island simultaneously from the East, South and West, having first neutralized the fixed and heavy defences of the island by flooding, which was to be effected by bombing the sea dykes. Gun support was to be supplied by a battleship and two monitors, while close support was to be given by support landing craft and Rocket L.C.T.'s. Under this cover our Commandos were to land at West Kapelle.

The assault was planned for 1st November—the first date on which the tide suited. There was a sense of urgency over launching the operation in order to enable the minesweeping to commence. This accounted for the decision to go ahead despite unfavourable weather which prevented air support for the operation and denied air spotting to the bombarding ships. The previous heavy bombing had done its work in disrupting the dykes and flooding the island, but had failed to neutralise the enemy batteries and, as the assault swept in, it was met by heavy fire.

In the event the brunt of the casualties fell on the gun support craft who closed in with the greatest gallantry and suffered heavy losses both in personnel and craft. The enemy concentrated their fire on the ships firing at them and thus the assaulting troops went through at comparatively cheap cost and the landing was established.

Minesweeping was commenced the moment the enemy's defences were dominated and by 26th November the river was sufficiently clear to allow the first ships to enter Antwerp.

You will note that I have made little reference to the actual operations of the minesweepers throughout my description of events from D-day onwards. Perhaps I can hardly pay them a greater compliment, since they made their great task seem a fairly straightforward business. As an illustration of what they did, I can say that between D-day and D+60 in the Channel operations they swept up 271 moored mines and detonated 534 ground mines. In the clearance of the River Scheldt they swept and detonated 287 mines.

With the opening of Antwerp the Navy was faced with a new task since the Army's supply route had to be protected not only against E-boat attack from bases in Northern Dutch ports but also against the enemy's steadily increasing use of midget submarines. To these the Scheldt approaches offered an ideal happy hunting ground. We did not get off without casualties, but it can fairly be claimed that the

enemy's counter-measures were held, and damage and casualties were inflicted on him on a scale adequate to blunt the edge of his enthusiasm for the attack.

THE FINAL OPERATION

Apart from the constant naval effort involved in guarding the supply lines to the Continent, the last naval task in the land operations leading to the capitulation of Germany was the provision of a force of landing craft to take part in the crossing of the Rhine. The force consisted of three squadrons, each squadron consisting of two flotillas, one of L.C.M.'s. and one of L.C.V.P.'s. These craft were shipped to Antwerp and then taken across country by tank transporters, which must have been an interesting and original experience for their ships' companies.

It was anticipated that these flotillas would be used for ferrying troops and vehicles across the Rhine in an assault, but in the event little such work fell to their lot and they were used in the main as standbys to the Sappers in towing and placing bridging pontoons and booms and in generally assisting over bridging work. In this respect they rendered invaluable service in the crossing of the river and fully justified the effort involved in getting them over the land and into the water where they were wanted.

CONCLUSION

So ends my account of the part played by the Navy in the Invasion of Europe and in the subsequent operations. But I would end, as I began, by reiterating that it is not my story but the story of a great man who has been taken from us by an unlucky chance. At one stage in the pre-D-day planning it looked as if our target date would work out as 4th June. Tidal conditions finally gave us 5th June as the target date and our capricious weather added a further day's delay. But it would have been indeed appropriate if Admiral Sir Bertram Ramsay who was responsible for bringing the last soldier home from Dunkirk on 4th June 1940, should have also been responsible for landing the first of the Invading Army in France on 4th June, 1944.

His friends will always grieve that he did not live to see our final victory but he died in the sure and certain knowledge that Victory could not long be delayed and he must have had the satisfaction of knowing that his own endeavours as the Allied Naval Commander-in-Chief had played a major part in ensuring our final triumph.

DISCUSSION

ADMIRAL SIR CHARLES LITTLE: I should like to make some remarks and observations in regard to the cost to the Navy of these operations in Europe.

The Lecturer told us at the beginning of his lecture that he was only going to cover the period of the Invasion operations, but the title of the lecture, I think, is "The Navy's Part in the Victory in Europe." That of course includes the campaign in the Mediterranean and the Battle of the Atlantic, which went on from the beginning to the end of the War, and the operations in the Narrow Seas of which the Invasion was the biggest and most important by far. The cost to the Navy of that victory was very heavy indeed as compared with the cost in casualties in the last war, and that is a thing which, I think, is not generally understood by the public. One often hears it said by those who, perhaps, do not want to face up to casualties, that they have been much less in this war, and of course that is very true. The Army being by far the largest Service has, owing to mechanization and one thing and another, and the great support given by the Royal Air Force in this war, which was lacking in the last war, suffered far fewer casualties; but the casualties to the Sea Services were greater than in the last war.

I think the First Lord told us the other day in a speech that the naval casualties were over 50,000 killed and missing, and I believe the casualties to the Mercantile Marine were in the region of 30,000 as compared with 15,000 in the last war; and I believe the naval casualties in the last war were something round about 30,000. These were due, I think, undoubtedly to the policy of unilateral disarmament and of appeasement which we were carrying on before the War—and well do I know it, having served in China, when war broke out in 1937, and having had to follow a policy of conciliation towards the Japanese.

But my point, which I feel we should all realize—because we were all in it and backed the policy of unilateral disarmament and appeasement—is this: we hoped to settle disputes by arbitration; we hoped very much there would be no more war; and as a result the fleet was reduced from some 109 cruisers in 1914 to less than 60 cruisers in 1939; we, with the public, as a whole, must be to some extent responsible for those casualties.

I believe our Chairman will bear me out and think I am right when I say that it was due to the Navy's very reduced state—which he of all naval officers realized so well in his brilliant campaign in the Mediterranean—that these heavy casualties occurred, and that the public must share some responsibility for them. I hope that such a state of affairs will not be allowed to come about again.

CAPTAIN E. ALTHAM, R.N.: I should like to ask the Lecturer a couple of questions: first, was it not a considerable anxiety to the Naval High Command to have to use such deep draught vessels as battleships and cruisers for bombarding, especially in the conditions prevailing on D-Day? Would not monitors, if they had been available in sufficient numbers, have been much better?

Secondly, one cannot help thinking that, had conditions been reversed—as they well might have been after our withdrawal from Dunkirk—that our Navy would have made a last desperate full-out effort with every surface ship at its command, in a dash down Channel to do the maximum possible damage to the invading forces. I quite realize that the enemy had not much left in the way of surface ships, thanks to the previous activities of our fleet and the R.A.F., but judging by what we found after the surrender, he must have had two or three big ships, and a number of destroyers available. The Lecturer said that the only serious effort to interfere with our operations was made by local torpedo boats and trawlers. Can he suggest why the German Navy did not make a better show?

THE LECTURER: Captain Altham has raised the question of monitors as opposed to heavy ships, and asked whether heavy ships were not an anxiety. Of course they were a certain anxiety. A heavy draught ship in the narrow waters of the Bay of the Seine was not an ideal ship. On the other hand, we wanted everything we could lay our hands on and the Admiralty would give us, because we were determined that we were going to use every pound weight of high explosive we could in advance of our soldiers. We reckoned that every pound of high explosive that could be fired at the German defences would probably mean one soldier casualty less during the landing operations. If there had been an enormous fleet of monitors, we should have been very grateful, but I do not think we could have expected it. The two monitors we had were used to the top of their bent, until they wore their guns out and new guns were put into them.

As regards surface ship interference, of course I agree wholeheartedly with what Captain Altham has said: there is no question that had the boot been on the other foot, everything afloat would have gone bald-headed for the enemy. I have no doubt that was the reason why Hitler eventually tore up Plan 'Archibald,' or whatever he called it, and never attempted his invasion. But in asking why the Germans did not do it, I think one has got to remember the psychology with which every man, woman and child in this country has been brought up, and the psychology with which every German has been brought up. The German has been brought up to believe that

Britannia rules the sea. I believe that it simply did not enter their minds to do a death ride down the Channel. As I have told you, we were ready for it, if they had laid the party on.

THE CHAIRMAN

Having listened to such a complete and lucid lecture, you will not wish me to detain you very long, but I should like to make just one or two points. First of all, I should also like to pay a tribute to my old friend Admiral Ramsay. I hope that his part in this operation will always be remembered, not only by sailors but also by everybody in the other Services, both American and British. It was tragic that he was not spared to have the satisfaction of seeing the fulfilment of the victory which he had done so much to plan.

My second point is that, in reflecting on the lessons to be drawn from this tremendous effort, I think we want to remember, as Admiral Little mentioned just now, that it was only a very small part of a really gigantic operation, and also that this operation in itself was only a part of the major strategic pattern which brought about the downfall of Germany and of her allies. The Invasion could never have taken place at all if it had not been for two things: one was the practical elimination of the enemy's surface ships, which removed the threat of any large-scale interference with convoys passing across the Channel; and the second was the fact that the Atlantic sea routes were kept open, so that these immense masses of material and immense numbers of personnel could be brought over to this country to mount the assault. I think that if those two things had not been achieved by the Navy, with the most powerful aid from the Air Force, this country could never have been turned into the very large advanced base which it became.

Another most important point—most important to me—that I wish to make is that the eventual success of the assault and the subsequent campaign was not due to the Navy for landing the Army and maintaining it ashore; it was not due to the Army for getting itself ashore and then thrusting into Germany; nor was it due to the Royal Air Force for the wonderful softening-up process which it achieved, or the continuous fighter protection which it gave both to the Army and to the Navy. It was due to the spirit of co-operation between the three Services, and to the wonderful team work which characterized the whole of this operation from the start of the planning until the final surrender of Germany. There is no doubt that in this war the Services have learnt more and more to co-operate with each other; they have found undoubtedly that they are dependent on each other; and in my opinion no battle or campaign can now be fought successfully without both the other Services being involved to a greater or lesser extent. I think it is very important that in our peace-time training this spirit of co-operation should be maintained and fostered. This Institution provides a very good opportunity for each Service to hear the point of view of the other two. In that connection I am very glad to see so many uniforms other than dark blue here to-day.

Just one final word about the Scheldt operation. That was a very fine operation, a typical example of an operation that was well carried out and well co-ordinated by all three Services. It was the very opposite of what happened in that previous Walcheren operation of 130 years ago which Lord St. Vincent described in the House of Lords as "Ill advised, ill planned; even its partial success is doubtful, and its ultimate object is impracticable."

I will conclude by asking for a hearty vote of thanks to Admiral Creasy for his most interesting lecture.

The customary Votes of Thanks to the Lecturer and Chairman were carried by acclamation.

MILITARY GOVERNMENT IN GERMANY

By MAJOR-GENERAL G. W. R. TEMPLER, C.B., D.S.O., O.B.E.

On Wednesday, 28th November, 1945.

LIEUTENANT-GENERAL SIR JOHN T. CROCKER, K.B.E., C.B., D.S.O., M.C.,
in the Chair.

THE CHAIRMAN: It is my pleasant duty to introduce Major-General Templer, who has come to talk to us about Military Government in Germany. He is the Director of Military Government on Field-Marshal Montgomery's staff, and therefore very highly qualified to talk about it. There is just one point before he starts; contrary to usual custom I am afraid we cannot have any questions or discussion after the lecture. I think you will appreciate it would be perhaps unwise to do that, as some of the things that might arise would have or might have international or political repercussions, which we want to avoid.

LECTURE

IN order to keep what I have to say within reasonable limits I have decided to apportion my time roughly in this way: for the first three-quarters of an hour I intend to talk mainly about the organizational and administrative aspects and the material problems involved; then, after a short interval, to devote about half an hour to the political, cultural and spiritual side.

The size and complexity of the problems facing Military Government can only be properly understood in relation to their physical and mental setting, and that is why I want to start by spending a few moments in reminding you of certain salient facts about the British Zone. They are not novel but they are important. In the first place it is an area of 38,000 square miles—it may help to visualize this in relation to our readiest unit of comparison, England. This area to the best of our knowledge, without up-to-date census figures, contains a population of about twenty millions—about half a million more than the basic resident population at the outbreak of war. This increased population now finds itself at the end of the War left with vastly diminished resources in food, fuel and housing—above all, in communications, transport and very many of the amenities of normal European life.

There is little need to expatiate on the size and intricacy of German industry in our Zone and the multiple economic systems which were so highly intermeshed, or their great importance in German, European and world economy. It is enough to mention, for example, that three-quarters of Germany's whole wartime average ingot production of steel and iron came from what is now the British Zone. Two-thirds of Germany's hard coal and 80 per cent. of her coking coal were produced in the thousand square miles of the Ruhr coalfield.

Then let us remember that all this and its kindred industries, all the highly developed means of feeding and distributing by land and water, all the thousands of workers both German and foreign, were subject for years to the steadily and then rapidly growing effort on the part of the major Allies towards physical destruction and moral disintegration by every means both overt and covert which our powers permitted and our brains could devise. Added to this there was the destruction caused by the actual fighting in the latter part of the campaign and the extensive demolitions carried out by the Germans themselves. Some Germans realized that this demolition policy was merely adding to disaster, and even within the Nazi

Party there were a few really far-sighted people who foresaw the consequences. Speer, for instance, in a memorandum to Hitler dated 15th March, 1945, after pointing out the acute wagon situation in the Ruhr and the impossibility of producing coal for shipping, railways, gas and electricity, had the sense and courage to say: "We have no right at this stage of the War to undertake demolitions which would affect the life of the Nation. It is our duty to give the Nation every chance which would ensure in the more distant future the ability to rebuild itself." Unfortunately for all concerned, no one heeded this very sensible argument.

Effects of Material Destruction

Only those whose task it is to restore a measure of normality can truly appreciate how thoroughly the work of destruction, both Allied and German, was done. All of you are by now familiar, through photographs at least, with the devastation of the cities and the major industrial targets. Let me give you another example of this thoroughness in destruction. Less easily appreciated by those not on the scene itself are the difficulties created in the sphere of transportation by the wholesale destruction of bridges both by bombing and by the Germans' own demolitions during the final phases of the campaign. All the major rail bridges had been prepared for demolition well in advance, and in practically every case those which were not down through bombing were demolished in a very thorough fashion. We also found, as was to be expected, very extensive demolitions of bridges along the lines of the major canals and rivers, especially the Dortmund-Ems and Mittelland canals and the Weser and the Elbe rivers. In the Ruhr, where fighting was severe, the bridge demolition was staggering and we are still trying to develop exits from that area.

A few figures may illustrate the extent of demolition and also the degree of reconstruction since achieved. In the German railway system in the British Zone on VE-Day there were 660 demolished bridges. Over 230 of these have now been repaired. Six hundred and fifty miles of railway track were then in operation; we now have more than 6,500 miles of track working. So far as canals were concerned, there was one bridge down for every three-quarters of a mile of canal in the Ruhr area, and a bridge down in every two and half miles of canal route throughout the Zone.

The destruction of the Rhine bridges has created very great problems and conflicting requirements. Initially everything was subordinated to the necessity for getting across the river and maintaining our forces during operations. So bridges had to be designed for rapid construction, and they consequently had short spans and were sited near the wrecked bridges to make use of the old road and rail approaches. This naturally and unavoidably prejudiced the opening of the river for navigation since, apart from the limitations imposed by narrow spans, only small demolitions could be carried out on the nearby wreckage without damaging our still important semi-permanent bridges. Meanwhile the extreme urgency of exporting coal from the Ruhr to the liberated countries made the opening of the Rhine for traffic a matter of first importance, and British troops and Germans worked twenty-four hours a day, making use of searchlights. Wreckage clearance went on until the end of August, and work now goes on unceasingly to increase the traffic down the Rhine. This entails the gradual substitution of wider span bridges for the existing narrow span constructions, which is of added importance since the latter cannot stand the pack-ice conditions which are experienced in severe winters. Then there are the further complications caused by the huge wrecked spans which are altering the course of the channel and rendering the behaviour of the river in flood or severe

ice conditions unpredictable. The loss to our coal traffic if the Rhine becomes impassable to navigation, or the bridges go, would be about a million tons a month.

Until the canal system in the Ruhr is opened up again, coal exports down the Rhine are of course limited to what can be taken to Duisburg by rail and there loaded on to barges. An additional export channel which will be of particular benefit to Denmark and Scandinavia is the Dortmund-Ems Canal which, as a result of a very big effort, it is hoped to open in January. Thereafter the clearance effort will shift to the Mittelland Canal.

I have dealt at some length with these bridge problems since the repercussions are, as you will have realized, great indeed and far-reaching. And bridges are of course but one example chosen from a great range of material problems, quite apart from the organizational, mental and spiritual ones of which I shall presently say more. But now, having tried rather hurriedly to give you some insight into our complexities, I should like to return to those main objects of Military Government which our very problems and the interest we develop in them can, if we are not careful, easily tend to obscure.

Definition of Military Government

Military Government has been defined as " that form of Government which is established and maintained by a belligerent by force of arms over occupied territory and the inhabitants thereof." It operates both before and after the end of organized resistance and sometimes remains in effect until a treaty of peace has been signed and ratified, but is more normally brought to an end as soon as satisfactory conditions have been created. It is replaced then by a system under which the occupied country governs itself subject to over-riding supervision and control. This is the Commission system of government.

The basic policy was summed up in the Supreme Commander's initial Proclamation to the German people : " We come as conquerors, but not as oppressors. We shall overthrow the Nazi rule, dissolve the Nazi Party and abolish the cruel, oppressive and discriminatory laws and institutions which the Party has created. We shall eradicate that German militarism which has so often disrupted the peace of the world." The plan for operation " Eclipse," the occupation of North-West Germany, stated moreover : " The establishment of Military Government in Germany is therefore the logical conclusion of our declaration of war on 3rd September, 1939, and it will be our policy to make this clear to the German people. Germany will be treated as a defeated and not as a liberated country."

Since the date of issue of Plan " Eclipse," in January, 1945, we have of course seen much of the given objects achieved, but the reality of German defeat when it arrived called for a less general definition of these objects, and the conference at Potsdam in late July and early August produced not only an amplification but also a vigorous reinforcement of the earlier generalizations. The purposes of the occupation of Germany by which the Control Council shall be guided were defined as follows :—

> " The complete disarmament and demilitarization of Germany and the elimination or control of all German industry that could be used for military production.
>
> To convince the German people that they have suffered a total military defeat and that they cannot escape responsibility for what they have brought upon themselves, since their own ruthless warfare and the fanatical Nazi

resistance have destroyed German economy and made chaos and suffering inevitable.

To destroy the National Socialist Party and its affiliated and supervised organizations.

Finally—To prepare for the eventual reconstruction of German political life on a democratic basis and for eventual peaceful co-operation in international life in Germany."

Of particular importance for the conduct of Military Government were the principles of administration laid down. The statement of principles reads thus: "The administration of affairs in Germany should be directed towards the decentralization of the political structure and the development of local responsibility." To this end local self-government was to be restored throughout Germany on democratic principles as rapidly as was consistent with military security and the purposes of military occupation; all democratic parties were to be allowed and encouraged and, though for the time being no central German government was to be established, certain central German administrative departments, headed by State Secretaries and acting under the direction of the Control Council, were to come into existence.

Moreover, it was provided that German administrative machinery would be created for the imposition and maintenance of economic controls, and that German authorities would be required to the fullest extent practicable to proclaim and assume administration of such controls, thus bringing home to the German people that the responsibility for the administration of the controls—and also for any breakdowns—would rest with themselves.

Administrative Policy

The present general administrative policy is one of building from the ground up, with a corresponding limitation of the powers of Germans at the higher levels. It is hoped that in this way a large cross-section of lower level administrators will acquire both experience and self-reliance. This whole policy runs counter to the German tendency to impose an elaborate, theoretical, authoritarian system from on top. Admittedly we control the German administrative machine, but we control it rather than operate it. This policy of indirect government is not only desirable but inevitable. Our lack of numbers alone is enough to compel us to adopt this policy. It follows, too, that Military Government deals primarily with the senior German officials rather than the lower officials and the citizens themselves, and that Military Government officers at lower levels function essentially as checking agencies rather than as administrators in the ordinary sense. Thus we have already gone some way towards adopting the Commission system and shall go further in due course.

Even before the Nazi regime had added a huge parallel administrative structure based on the Party *Gau*, the German system of regional and local government was already a complex one. In Prussia, for instance, even after the virtual abolition of the Prussian State Government, there remained five levels of government. Under the Nazi regime, in addition to the Party hierarchy which developed alongside the old administration and in many respects came to outdo it in importance, certain systems of administration were encouraged for various technical functions, and their regional boundaries failed to coincide with those of the general administration.

In the Spring of 1945 the whole of this elaborate structure and its incorporate

systems collapsed. The great machine which but a short while before had controlled so thoroughly the whole life of the German nation not only ceased to function but disappeared almost entirely. It is true to say that in most places there was no local administration functioning when our troops took over, and Military Government had to build up the entire machinery afresh.

At the time of the capitulation, the Zone which had been occupied by the 21st Army Group can justly be described as an administrative desert. The only exception to this was Schleswig-Holstein, which had not been fought over and in which some degree of civil administrative organization still existed, though the whole province was a milling mass of *Wehrmacht* and refugees from the eastward and from the southward. Generally, however, the machinery of civil administration had ceased to exist. The police forces had disintegrated; law and order were non-existent; the civil medical services had broken down, except in so far as individual efforts were concerned, and the reporting of communicable diseases had ceased; there were no postal or telephone services; not a school was open; food collection and distribution had stopped; the banks were closed; there were no Courts of Law working, even had there been any method of bringing offenders to book; there was no distribution of any essential commodity such as fuels for power stations; public utilities such as water, light and sewerage were mostly a thing of the past; there were no rail services and there was not a civilian vehicle on the roads, except those commandeered by the displaced persons; and, finally, there were 2½ million of these slave workers milling about in every direction, drunk with their new-found freedom if not with looted stocks of liquor, and with their minds made up on one point only, that they would not obey the "stand fast" order which they had received. Altogether it was a rather frightening picture of the disintegration of all modern civilized life, and one which could only be dealt with by those concerned by local and immediate improvisation.

Composition of British Zone

Before examining the present state of German administration let us run briefly over the regional composition of our Zone which incidentally presents a good cross-section of the German system of regional and local government. It contains three Prussian provinces and part of a fourth (Schleswig-Holstein, Hanover, Westfalen, Nordrhein), two typical Lander (Braunschweig, Oldenburg), two dwarf Lander (Lippe, Schaumburg-Lippe) and one of the old city States (Hamburg).

The provincial administrations are of course the most important German filled organizations in the Zone, and it is at this level in the first instance that British policy is transmitted to the Germans. The *Oberpräsident* of a province issues orders to the main districts of the province—the *Regierungsbezirke*, each of which is headed by a *Regierungspräsident*. Each of these main districts is composed of *Landkreise* and *Stadtkreise*, rural and urban sub-districts, and these in turn are divided into parishes. At each stage down to *Kreis* level the actions of the German administration are controlled by British Military Government detachments.

The main aim, born of necessity, has been to get the wheels moving again while at the same time clearing away the rubble of the tumbled Nazi structure. In both these tasks much indeed has been achieved. Denazification has gone and still goes steadily forward, and the apparatus of local and regional government has been built up again from the foundations. At each level from the province downwards there is a flourishing and hard-working German administration. It is not yet claimed that these administrations are working with 100 per cent. of their one-time efficiency,

but their achievement is remarkable when one reflects that they have grown from practically nothing in just over six months and are composed of persons of widely diverse degrees of experience, many indeed learning as they go.

Of the major problems affecting the redevelopment of German administration, denazification naturally demands the greatest and most constant attention. Here we are confronted with the necessity for a thorough investigation of over three-quarters of a million individuals, in order to decide whether they can enter or remain in office or employment where they would have the opportunity of influencing German politics, also whether they are likely in any way to affect the security of Military Government.

Denazification Policy

Denazification policy has been laid down in broad terms in the Potsdam Agreement, and a Directive embodying the terms of this Agreement has been carried out in the British Zone. The denazification policy as set out in this Directive is put into effect by Military Government personnel in detachments at *Kreis*, *Regierungsbezirk* and Province levels, by officers in the various Headquarters Sections of the Control Commission engaged in the re-establishment of industry and by Special Branch officers of the Public Safety Branch. Records show that over 180,000 cases, dealt with since the occupation of Germany, had been listed up to the end of October. The statistics show that about 50,000 persons have now been dismissed from administrative or other influential positions in public life and that another 54,000 have been placed under arrest. Of nearly 120,000 applicants for employment, up to the end of October over 12,000 were refused.

Cases are being dealt with at a rate of some 80,000 a month. It is expected that the first review of all cases will have been completed by August, 1946. From then onward the work will consist mainly in re-examination of cases in the light of fresh information.

So much for the actual machinery and the guiding principles of denazification. Let us now consider it in relation to recruitment into the administration. The main difficulties are these—in the first place there is the thorough Nazi permeation of all but the lowest administrative grade; almost all German officials were more or less deeply compromised with Nazism. Then there is the corollary, the paucity of trained and acceptable German personnel. Democratic officials, dispossessed in or after 1933 and now available, are relatively few in number, and many of these are too old or rusty for responsible employment. The sincere anti-Nazis also have their shortcomings, and they too do not necessarily make good administrators.

Frequently the removal from office of a Nazi who is thoroughly trained in his work results quite naturally in a temporary, if local, decrease in efficiency, but such consequences have to be accepted, and the principle is rigorously maintained that the Nazi must be replaced by the anti-Nazi, even if the latter is less efficient.

Great importance attaches to the strength of the anti-Nazi convictions of senior German officials, particularly since these officials are responsible for nominating suitable candidates for appointment to subordinate positions and also in view of the fact that Provincial *Oberpräsidenten*, for example, have tended to gain a certain added importance and power as a result of the disappearance of their former higher authority, the central Reich Government. This tendency, incidentally, has not passed unnoticed or unchecked.

The whole task of denazification is one which calls for unremitting energy and

a steady refusal to compromise. To those who still see persons in office or positions of influence who had strong Nazi sympathies or Party ties—and nearly every German knows of someone at whom he can point—our system appears perhaps both slow and patchy. But as the work goes steadily forward, many of these early critics are being gradually brought round to the view that " Slow but sure " is no idle phrase where the British are concerned, and that there is indeed a wide plan in operation rather than a capricious and fitful elimination policy.

Other Administrative Problems

There are at present some large administration problems other than the overall one of denazification. For example, how can the activities of the Military Government Regions, roughly corresponding to the Provinces, be co-ordinated on a wider scale ? The need is becoming more and more urgent for some form of zonal administrative authorities, pending the establishment of those central German administrative organizations accepted in principle at Potsdam. Some such zonal administrative authorities, mainly with economic functions, are in fact already established or planned, most of them advisory, but some with executive powers. The question of establishing a general Zonal Advisory Council is at present under consideration, and that brings me to a widespread administrative development at lower levels which is of great importance, namely, the progress being made in the appointment of Advisory or Executive Councils. The Commander-in-Chief's policy of restoring self-government has now been further implemented by a directive giving instructions for the establishment of nominated representative councils at every level of government. This directive is now being put into force throughout the zone progressively from the lower levels upwards.

The members of these councils are nominated by Military Government where possible from lists of people submitted by the Germans, and the aim is to make them fully representative of all interests of the community. Members are unpaid, and the Councils have full executive powers, being responsible for making the policy decisions which the paid servants of the administration execute.

Nominated representative councils represent a first step towards the ultimate establishment of elected councils at all levels of government. Our present plans provide for elections to be held at *Gemeinde* and *Kreis* level in the early Summer of 1946, and at regional level at a later date—perhaps in the Autumn of 1946. I shall presently say more concerning the reasons why Military Government and the German officials are unanimously against holding elections earlier.

Some of the major difficulties affecting the administration have already been mentioned, but it would be wrong to say nothing of the special difficulties with which local authorities have to contend. Foremost among them is the unprecedented economic distress which brings in its train a whole series of practical administrative problems ; then there is the damage to public buildings, the movement of evacuees and refugees, the shortage of good acceptable administrators and, what is also an important factor, the general lack of energy due to war strain and undernourishment.

This is perhaps an opportune moment to say something, too, concerning Posts and Telegraphs in the Zone and between Zones. Any administration trying to work without these facilities and with limited transport at its disposal can only function locally and with greatly reduced effectiveness. The German postal service was suspended from the time of occupation until 1st July, on which date a restricted letter and postcard service was opened in the British Zone for official and administrative

purposes, trade, industry and certain financial services, and at the same time postcards only were allowed for domestic and social purposes. Initially the services operated within postal regions, but as the transportation position improved they were gradually extended throughout the British Zone and late in October inter-Zonal postal services for all four Zones of Germany were opened. Since September there has been a postcard scheme to enable members of the *Wehrmacht* to get in touch by post with their relatives. A postal service for displaced persons was also instituted recently. The provision of fresh postage stamps and the reorganization of postal transport demanded considerable effort, as did also the re-opening of the telegraph service throughout the Zone which took place in September.

Law and Order

Quite apart, however, from all considerations of organization, local, regional or zonal, politics and the development of local government, there are two main things which have to be achieved and without which all else is lost effort. Military Government is dependent, like any other government, on the establishment and maintenance first, of law and order; second, of material sufficiency and some sort of working economy. The first is the great *sine qua non* and the second is dependent on it.

The first is really a twofold matter: there is the establishment of civil order—public safety and the re-establishment of a valid police and legal system—and then there is the overcoming of resistance overt and covert, the attempts to continue the war. To deal with the former side: as might be expected, the crime rate was high in the period following the entire physical and moral breakdown of defeat, particularly in crimes of violence, thefts and sexual offences. These, though still high, show a considerable decrease during the past three months and this decrease is due, to some extent, to the following causes: the return of foreign displaced persons to their own countries, the exemption of police from curfew restrictions and the strong counter-actions being taken by Public Safety and the police, reinforced by Army personnel. The crime total for September was nearly seventy thousand, including over 90 cases each of murder and rape and 900 robberies, and nearly a third of all cases resulted in detections. The position with regard to the surrender of arms is still not very satisfactory; the last Arms Amnesty produced about 16,000 fire-arms, but it is felt that a further amnesty designed to cover all nationalities would produce many more. The Black Market does not appear to be organized except in one or two areas, and strong action, effectively supported by German police squads, is being taken against it.

The first steps have now been taken towards the reorganization of the German police system into forty separate forces organized and administered on British lines with similar responsibilities. It is intended to transfer the functions of police authority to committees on the lines of the English Standing Joint Committees and derived largely from the nominated local government councils of which I have already spoken. These authorities will have no executive control over their respective police forces, but will be charged solely with setting them up and maintaining them.

It has been necessary to pay particular attention to the personnel side of the police problem, since it is estimated that some 40,000 policemen will be needed in the British zone. Over half of these have already been recruited and are performing duties side by side with about 11,000 auxiliary police. There is at present no marked shortage of suitable recruits, but the machinery for recruitment has had to be geared to the machinery for training. A central police training school has already been

functioning for several months, and is producing instructors for the large provincial schools of which five are already functioning. It is hoped that each of the forty Forces will also have its own local school by the beginning of the New Year.

The German police are proving themselves very adaptable to the new methods imposed on them and are carrying out their duties with considerable efficiency. The Fire Services, which suffered severely in the final phases of the War, are also being resuscitated and have been directed to form efficient Ambulance as well as Rescue Services. There are at present some 5,000 professional and 150,000 volunteer firemen in the British Zone.

The Legal System

To turn for a few moments to the legal system. On our initial entry into Germany all the German courts were suspended by Military Government law; certain Nazi laws were also abrogated, and all German law which by its application would cause injustice or inequality was suspended. Since the purging of German legislation is a long and very large task, it was decided to dissolve certain special and Nazi Party courts and tribunals, and to suspend only temporarily the ordinary and administrative courts until they could be re-opened with a staff which could be trusted to carry out our policy of de-nazification of German law and German legal personnel. So far, we have found that all German lawyers are applying Allied policy scrupulously. Two-thirds of the total number of courts which it is intended to re-open have already been opened, and in this connection the main difficulties have been the finding of suitable accommodation and capable judges, prosecutors and other legal officers, since no Nazi, unless only nominally a Party member, is allowed to hold any appointment or practise in the courts. The main difficulty on the British side is the lack of qualified British lawyers to carry out the work which is of the most varied character and of such importance both to Military Government and ultimately to Germany itself.

I have already mentioned German resistance activities as the other main consideration with regard to law and order. Towards the end of the War the Germans did set up a genuine "stay-behind" resistance organization—the Werewolves, with the object of carrying out sabotage missions against the Allies in occupied Germany. This organization, which was somewhat primitive, was overrun before it became formidable. It started in secrecy; Goebbels later gave it maximum Press and wireless publicity for some weeks, and thereafter it achieved practically nothing. A female organization, designed to penetrate Military Government, was also discovered and dealt with. In general, since the occupation of all Germany there has been a considerable but not alarming number of minor cases of sabotage, chiefly cutting of signal wires and stretching wires across roads; and recently there has been more minor insubordination. But while some of the acts of sabotage are the work of local gangs, there is absolutely no sign of any widespread organization at work and there is good reason to believe that if any major resistance organization springs up in the future it will be a successor and not a survivor of those things planned before defeat.

Working Economy

I now come to the other great pre-requisite for the success of Military Government—the material side, the restoration of an economy adequate for life in a shattered country and in the face of a Central European winter.

At Potsdam it was laid down that Allied Controls would be imposed upon the German economy, but only to the extent necessary:—

(*a*) to carry out programmes of industrial disarmament and demilitarization, of reparations, and of approved exports and imports;

(*b*) to assure the production and maintenance of goods and services required to meet the needs of the occupying forces and displaced persons in Germany, and essential to maintain in Germany average living standards not exceeding the average of the standard of living of European countries (meaning all European countries excluding the United Kingdom and the U.S.S.R.);

(*c*) to ensure, in the manner determined by the Control Council, the equitable distribution of essential commodities between the several zones so as to produce a balanced economy throughout Germany and reduce the need for imports;

(*d*) to control German industry and all economic and financial international transactions, including exports and imports, . . .

(*e*) to control all German public or private scientific research . . . connected with economic activities.

It was agreed, moreover, that measures should be promptly taken to effect essential repair of transport, enlarge coal production, maximize agricultural output and effect emergency repair of housing and essential utilities.

What then is the actual economic state of affairs?

It is most fortunate that victory came in the Spring and that the Summer weather has eased the lot of those who are homeless and short of clothing and has helped to conserve the health of the many living on an inadequate diet; above all, that it has given precious time for planning and preparing against the huge threat of the Winter. The Battle of the Winter—to use Field-Marshal Montgomery's name for it—has called for planning like few other battles, and the lives of millions are at stake. Economic Planning Committees and Sub-Committees, for the Zone and its provinces respectively, were set up some time ago, and they do their human best with what resources still exist; but it is recognized all too keenly that no amount of planning and makeshift in the world can render a solution of this Winter's problem more than a partial one.

Basic Needs

Since almost all the material aspects which matter at the moment have their importance in relation to this all-embracing problem of the Winter, I propose to deal with them first under the headings of the basic human needs. We all have to have a roof over our heads; we have not only to conserve bodily warmth with clothing, we have to add to it with food internally and with fires externally both by direct heating and by the cooking of food.

Coal is the greatest single factor, and it is inseparably bound up with the whole question of transport resources. But first let us consider coal production itself. Roughly the present position is this, that something over a third of the pre-war amount of coal is being produced; and the reasons for this are various bottlenecks—the shortage of labour, for example; the *Wehrmacht* as a source has now dried up and requirements must now be met by drafting in trainees of little production value during the early months of training. Mine supplies are a constant problem. Machinery is wearing out; it has not been possible to build up a really adequate Winter reserve

of pitprops; miners' clothing is in short supply and clothing levies will not provide the specialized clothing required; the acute housing situation in the Ruhr keeps many miners from work while executing repairs. Incidentally the question of food and consumer goods for the miners has also needed special attention, since the labour force must be contented and healthy if production is to increase.

What is happening to the coal that is produced? Coal allocations are made on a quadripartite basis in Berlin and the broad priorities are:—

Military needs of the occupying forces, including transportation.

Export to liberated countries (a very considerable item).

And lastly, Military Government needs within Germany.

The main uses to which coal must at present be put are for those industries which will increase facilities for coal production and movement, while maintaining a subsistence level of food and public utilities. Unless coal can be produced and distributed for these purposes, there is a grave danger that the reaction on the supply of mining and transportation stores will be such that coal production will fall rapidly to nothing. The resulting economic collapse would affect not only Germany, but those countries which depend on German coal.

The programme of movement of all essential commodities such as coal, sugar beet and building materials is centrally planned and given to the German transport authorities who are responsible for its execution. Coal is by far the largest item and it is a constant struggle to move more and more. We are now moving nearly 140,000 tons a day, but transportation facilities will of necessity remain the bottleneck for some time. The limiting factor in this instance is availability of rolling stock, and this in turn is aggravated by a lack of repair facilities. It is no exaggeration to say that the whole economy of Western Europe at this time is conditioned by our ability to obtain more railway wagons. Nations who import coal from the British Zone in Germany must assist us by sending wagons to fetch their coal; and merely fetching it is only a part solution, since a sufficient pool of wagons must be kept in circulation in the coal-producing areas to enable the coal to move freely and economically for the benefit of Western Europe as a whole. It is on a possible re-distribution of wagons, on the restoration of the industries necessary for repair and maintenance of rolling stock and on the re-development of inland waterways that any substantial improvement in the internal transport situation will depend.

Our North German Coal Control has now dissolved the great German coal syndicates and removed all their directors and policy-making heads, but the machinery of their coal-marketing organization has been retained in the form of Coal Distribution Offices with a new management, which has been security screened. This organization now works out the detailed breakdown of coal consignments into movement programmes, under the direct supervision of North German Coal Control.

Food and Agriculture

Now let us consider food and agriculture. It is generally true to say that, during the first three months of the occupation, production did not catch up with current consumption, and such stocks as were in being were dissipated. Another factor of importance at that time, and one which is of serious consequence for the present situation, was the cessation of food processing at the highest productive period of the year, so that the stocks normally accumulated for Winter consumption were not built up. No amount of effort can make up for that gap in production.

Agriculture in Germany had been brought to the highest pitch of production, and two main factors contributed to this: the liberal use of artificial fertilizers and the employment of a great labour force—largely foreign labour. But the distribution of fertilizers declined after 1942 and the land became increasingly impoverished; with the occupation, moreover, the foreign labour ceased to be available and essential cultivation during the first two months was seriously affected. The employment of demobilized ex-*Wehrmacht* members did, however, provide sufficient labour to gather this year's harvest. All the same, the harvest yields have been extremely disappointing. Cereals were adversely affected by wet weather; the root harvest has been better than anticipated, but below average. As much as is possible is now being done with fisheries, and all available German fishing boats—only 40 per cent. of the pre-war fleet—have been operated to full capacity during the past two months. Half of the current catch is retained for processing.

When considering all these local resources the important thing to bear in mind is that at no time in the last fifty years has any degree of self-sufficiency been achieved in the area which is now the British Zone, and that a heavy traffic of food from the surplus area in the East to the urban concentrations in the West was the normal practice. Thus a deficiency must be expected which can only be met by considerable imports. The overall food deficiency on the present low and inadequate ration scale is equivalent to two million tons of wheat a year. The wheat and flour position moreover is such that it is doubtful if distribution of flour and bread in the coming weeks will be possible over large areas, unless adequate working stocks are built up, and regular imports of wheat are forthcoming. And to achieve a ration scale which would prevent disease and malnutrition, these imports of wheat would have to be supplemented by supplies of animal protein, *i.e.*, meat and fats, but owing to the great world shortage of fats there seems to be no hope whatever of supplies of this latter kind.

The feeding of the population of the British sector in Berlin from the British Zone is worth mentioning, since it has imposed an additional burden on the strained local food supply situation. Not only has it been necessary to feed into Berlin some 25,000 tons of potatoes a month in addition to meat, fats and so on, but since potatoes are highly susceptible to pest and cannot be moved with safety from mid-November to mid-March, it has been necessary to try to build up a four months supply in the city, amounting to about 100,000 tons.

A word about the rationing system and ration scales. The population is classified into consumer groups according to age and occupation, with a ration scale, for each group, *e.g.*, children of various age groups, normal consumers, heavy workers, miners, expectant mothers. Difficulties of food supplies and distribution result in regional variations, but the daily calorific average for the Zone is about 1,500; and there is no chance of any increase in these figures for the urban non-producer during this Winter. Perhaps it can be more readily appreciated what this means if I point out that 2,000 calories a day is the figure recognized by the Allied nutritional authorities as that below which health cannot be maintained, and that the lowest average in England has been about 2,800 calories with the points system in addition.

The clothing and textiles position is as follows: the provision of clothing for ordinary civilians has been regarded as the lowest priority in view of the large requirements of displaced persons, essential workers, public services and prisoners of war. It is quite certain that practically nothing can be produced in the way of new clothing for Germans within the next six months. Those German civilians

who have no reserve of clothing or bedding will be exposed to considerable hardships. Several clothing levies—heavy ones, were made in the early stages of the occupation, and now another one has had to be made on the civilian population to help provide for the priority needs just mentioned. This levy also provides bedding for a hospital reserve for epidemics. On the whole it is going well and, with regional variations, was 70-90 per cent. complete by the end of October. There is, however, a serious deficiency in blankets, boots and shoes.

Housing and shelter also fail to provide a rosy prospect. Of the five and a half million dwelling units in the British Zone (there was, incidentally, a considerable housing shortage before the War), less than half remain undamaged and, of the rest, two million are written off as destroyed. This leaves over a million dwellings needing repairs, and the amount of reconstruction needed is so vast that only the most urgent work of this kind can be done in the first two or three years. Meanwhile the approach of Winter has lent extreme urgency to the programme of emergency repairs to houses and this is being treated as a military operation. But here again we come up against the familiar limiting factors—coal to make materials, transport to move both them and the coal, and labour to use the materials. At present, new construction is virtually forbidden and it is quite clear that the long-term building programme will have to be controlled in all its aspects. Not only buildings, but movement of population, will have to be controlled in view of the dangerously rapid regrowth of population in the ruins of the larger cities. Cologne, for example—a city with a pre-war population of nearly 770,000—with only 20 per cent. of its dwellings left, has increased its population from 60,000 to 400,000 in the past six months.

State of Public Utilities

This is perhaps a good point at which to say something of the general state of public utilities, since these bear equally upon housing conditions and health. There was, of course, very extensive damage to water and sewage systems in most of the large towns, and immediate repairs were carried out to avoid disease and epidemics. As a result, there have been practically no cases of water shortage and comparatively few cases of typhoid. The long-term policy of reconstruction, however, will take a very long time. Gas mains were very severely damaged by air attacks and land fighting, but considerable progress has been made in restoring supplies, and over 40 per cent. of gas grid mains are now at work. The German electrical power system was almost completely out of commission, and the whole network of power lines, cables, pylons and sub-stations had suffered severely. But the problem was tackled energetically and already by the end of July the system throughout the Zone was working reasonably well—a magnificent feat of improvisation on the part of those British officers concerned.

The only real guarantees against epidemics are adequate food, fuel and shelter, and the Medical Organization is well aware that it can only mitigate the effects of the lack of these things. It is known that ordinary disease will take a heavier toll and that people who would normally recover will die this Winter; and those less seriously ill will take longer to get better. Above all there is the danger of serious outbreaks of epidemic disease. The German Public Health system collapsed with the rest of the Nazi machine, and rigid de-nazification accounted for much of what was left of the health administration, but the gaps have now been filled, and by September the administration was complete up to the Provincial level. In that month, too, an emergency Winter plan for combating epidemics, formed as a result

of several months' investigation, was put into operation. This aimed at providing one hospital bed per 100 of the population—a good figure even for normal times, and by the end of October, despite the needs of British troops, displaced persons and the ex-*Wehrmacht*, the target had been practically reached. Forty thousand additional emergency beds are also being earmarked. There is something of a surplus of doctors now in practice in the Zone, roughly one to every two and a half thousand of the population, and medical personnel on hospital staffs are adequate. There is no overall shortage of nurses, but not enough of them are fully trained. German production of essential drugs is progressing, but slowly—again on account of the difficulty of coal supply, skilled labour and transport.

Of the infectious diseases, typhus, influenza and diphtheria represent the greatest dangers. The typhus epidemic has disappeared since the Spring, but all the conditions conducive to its spread are present, including the influx of infected refugees from the East, and good fortune and hard work will be needed if it is to be controlled this Winter. There should be no spread to the British soldier, who is protected by inoculation and better living conditions. There has been no sign of an increase in influenza, but instructions for control have been issued. Diphtheria has shown a general increase in Western Europe, and the rate will probably continue to increase during the next six months.

Apart from matters such as the production of disinfectants and pharmaceuticals and items such as soap, this is perhaps the place to say something about the chemical industry in general. The British Zone is very important chemically—comparable only with the Russian in this respect—and the German chemical industry was, of course, a most powerful instrument for war. It has, however, been found necessary to re-activate certain chemical industries. Explosives, for example, are urgently needed for coal and certain other mining and quarrying processes and are produced under very strict security conditions. Soap is in very short supply, and soda is needed for a wide range of purposes. So, too, are certain acids. Shortages of coal tar products are likely, and if the minimum requirements of chemical pulp for textiles and paper are to be produced, it will be necessary to import from other Zones or from abroad.

Every activity and every industry, of course, demands some road transport and, consequently, motor fuel. Civil road transport had come to a complete standstill in May, 1945, and the chaos was extreme, but by the end of October the re-activated German civil administration was in a position to exercise close executive control over all aspects of civil vehicle operation such as vehicle registration, licensing, fuel and tyre rationing, production and distribution of spare parts, workshops, the use and travelling range of vehicles and also the repair and re-establishment of bus and train services. Quadripartite agreement has also been reached on all matters affecting tariffs, freight charges, licensing, and permits for the circulation of vehicles between Zones. The motor spirit requirements (excluding military needs) for the British Zone are at present 40,000 tons a month, of which nearly two-thirds is Diesel oil, and every effort has been made to derive as much of this as possible from indigenous sources. The "North German Oil Control" was formed to re-activate and control the oil industry which had practically ceased to function by the time of the German surrender, and at present some 18,000 tons per month are produced in the Zone. Of this, 7,000 go to the United States and French Zones. As a net result about 30,000 tons have to be imported monthly.

Up to now, I have said little or nothing about steel. The greatest objection, of

course, to the re-activation of the steel and heavy industries is that it keeps alive the same capacity that was used during the war for the manufacture of guns, tanks and other heavy weapons. Quite apart, however, from considerations of the possible reduction in importance of such weapons in the future, it is quite clear that, if Germany is to be placed on her feet at all, there must be a backing of heavy industrial capacity for the lighter forms of manufacture which she will be allowed to keep. It is the intention to limit as far as possible (or even cut out entirely) the production of ferrous alloys, electric steel and alloyed steels. Without these, no real war potential can be established, but the peace-time needs of the country can be largely met. The heavy mechanical industry is to be reduced to the lowest level consistent with Germany's future economic life. So far so good. It must not be forgotten, however, that it was also laid down at Potsdam that Germany was to be not only industrially disarmed, but treated as a single economic unit, and that " Allied controls shall be imposed upon the German economy, but only to the extent necessary "—among other things—" to ensure . . . the equitable distribution of essential commodities between the several zones, so as to produce a balanced economy throughout Germany and reduce the need for imports." If the British Zone is to play its part in this balanced German economy, it must make its contribution out of its leading resources, out of its industrial capacity. The part restoration of Ruhr industry will, therefore, be a matter of logical consequence rather than a mark of any infirmity of purpose or departure from policy. There is still much truth in the words of a former Allied Commander : " Battles can be won with bayonets, but the result of war is decided by economics." That Commander was Frederick the Great.

Politics

It comes perhaps as little of a surprise to you when, turning from the dismal economic aspect to the cultural and spiritual side of life in the Zone, I say that party politics these days mean little or nothing to the vast majority of Germans. If life were simpler, if housing, food, clothing and work did not present such immediately pressing problems and he had more energy to spare, the German might take a much more active interest in the renewed political freedom offered him. Many a German is " unpolitical " anyway, and readily looks for an excuse for remaining so. Many others, saturated with " political education," have a loathing for what they regard as political claptrap, and even the word " party " has an unpleasant ring. Others, priding themselves on their realism, say that politics have no meaning under an occupation, and that no programme or manifesto can be translated into action in any case. So why bother ?

But what of those who are actively interested in politics ? What of the minority? These, too, are of different kinds. There are the " professional politicians," some trying to pick up the thread they lost in 1933 ; there are those who are plunging into politics with maximum opportunism while the competition is not too fierce ; and then again there are those who with new and public-spirited resolve are trying to improve matters by political means.

For some time after the occupation it was doubtful whether the " old " parties would revive, but now it is clear that at least two of them are properly back in the field—the Social Democrats and the Communists, and that the place of the largely denominational Catholic Centre Party has been taken by the deliberately more broadly based, generally middle class, Christian Democratic Party. You are too familiar with the first two parties for me to say much of them. The Social Democrats with probably the greatest mass support give less of an impression of good organization

than the well-disciplined and active Communists who wish to co-operate with them and form a single working class party. With the granting of permission to form political parties, the Social Democrats have, however, shown greater activity by organizing themselves throughout the Zone and playing a prominent part in the formation of trade unions. If anything, the Social Democrats at present lay greater stress on the need for a full policy of socialization than do the Communists. The Christian Democrats, who are strongly represented in the Rhineland and Westphalia and have been the latest to organize themselves, have recently shown considerable activity and extended their influence. They attach less importance to nationalization, but acknowledge its necessity in certain vital industries. Their main planks are private ownership, free enterprise and a demand for the right to open Confessional schools. So far there is little indication of their success in attracting large Protestant support. The Right Wing parties still lack cohesion and any large measure of popular support.

In spite of all the activities of the various parties, however, it remains true to say that German politics give an impression of unreality. The vast majority of Germans are still apathetic, and the policy of Military Government, in not allowing opportunists to trade on popular apathy and acquire political powers out of all proportion to their representive importance, is undoubtedly in the truer interests of any German democracy than would have been the early granting of complete political freedom and the premature holding of elections. In any case there are many large practical steps which will have to be taken before proper elections can be held: an effective electoral register is necessary, the whole question of electoral procedure will need careful consideration, German expert opinion will have to be consulted, and the political parties will require more time to organize and formulate long term programmes.

Trade Unions

What of the Trade Unions? The Potsdam Declaration lays down that, subject to the maintenance of military security, trade unions may be permitted. Here, too, the Allied policy is that the formation of these organizations must be a process of democratic self-expression and initiative. They must be formed at the lowest levels to start with and at all steps the workers must themselves express their opinion. Later on the unions may federate or amalgamate into larger organizations. Military Government control of trade unions is as light as possible, and it is no part of our policy to impose British trade union ideas and practices into Germany. German trade unions must be a native growth and spring from German initiative.

Progress in their formation is uneven in the Zone. In Hamburg for example they are well advanced, whereas in North Rhine Province little progress has been made so far. In most cases the present objective of the German sponsors is to form a general union open to all workers in a given area rather than to limit membership on a craft or industry basis. One of the principal difficulties is the shortage of responsible leaders. Most of the pre-Nazi trade union leaders were liquidated by the Nazis, and the majority of the remainder are either too old or out of touch through having been abroad, and incidentally have lost the trust of their compatriots. The younger workers who have known only the German Labour Front will have to be educated by the new trade unions, and these must first educate themselves with the aid of our advice. The growth may be slow, but that is not serious provided it is sound.

German social insurance is a comprehensive and highly complex system which Military Government had to try to save from complete collapse and also denazify, abolishing discrimination in the payment of benefits and restoring the insured person's right of appeal. At present, with one exception, namely unemployment insurance, all the schemes are operating—old age, widows' and orphans' pensions, and workmen's compensation. Though the schemes are operating efficiently at the moment their financial position is admittedly still uncertain, and widespread unemployment and an increase in sickness—each of which is a possibility—might impose too great a financial strain on the social insurance system.

Religion and Education

It is now time that I said something of religious affairs and education in the Zone. The Roman Catholic Church, for all its success in maintaining firm and coherent organization during the Nazi era, is experiencing its own difficulties. Certain large parts of the Church provinces of Paderborn and Osnabrück lie in the Russian Zone with the result that there has been some lack of diocesan control for some time; the damage to Church property has been considerable; there is a serious shortage of priests, though their release from prisoner of war camps is going forward rapidly. Every facility was given for the Bishops to travel to Fulda for their annual conference, and they issued a general statement of guilt, but were unanimous in their refusal to blame the entire German nation for atrocities in concentration camps and occupied territories.

The Protestant Church, though its organization suffered considerably under the Nazi regime and despite certain old-established sectional differences, achieved a high degree of unity at the important Treysa Conference. As a result the Conference succeeded in establishing a Council of Twelve, containing all elements of the three main sections of the German Evangelical Church and constituting the valid authority of the Evangelical Church as a whole.

We have given every facility for the holding of synods and meetings including the first German Foreign Missionary Council. The Protestant Churches of Germany have for years had no contacts with foreign churches, and visits by British and Swedish Church leaders have been encouraged and sponsored.

Sects persecuted or banned by Hitler are now being resuscitated, and our policy is freedom of worship for every faith, provided, of course, that religion is not used as a cloak for undesirable political activities. Methodists and Baptists are now putting their house in order, and Christian Scientists, Quakers and Moravians are showing signs of new activity. The German Christian movement appears to be moribund.

Now let us turn to Education in general. As I have already said of so many things, chaos prevailed at the outset. Even before the collapse the educational system had been working erratically and, in some towns, schools had been shut for months. First the necessary administrative staffs had to be found, and then school buildings. In the period immediately after the campaign, school buildings which had survived were obviously desirable as accommodation for troops or displaced persons or as hospitals, and their recovery for use as schools has raised a number of difficulties.

The next step was to secure teachers. The records of all teachers were examined and by mid-October over 34,000 were employed in the Zone with Military Government approval, while about 10,000 had been refused employment, dismissed or arrested, and 13,000 more awaited examination. This has increased the need for

a supply of good teachers, and energetic steps are being taken to reorganize the training colleges. Another matter which required much attention before much progress could be made was the provision of text books in place of the corrupt Nazi publications. Over a million emergency text books of pre-Nazi days have been printed; those for six to ten-year-olds have been distributed, and those for ten to fourteen-year-olds are now in process of printing. Germans are engaged in writing new text books. A start has also been made with school broadcasts.

As for the re-opening of schools, the present position is that over 7,000 elementary and intermediate schools, with well over a million and a half full-time or part-time pupils, are now functioning. Two hundred and fifty secondary schools have also been opened which are dealing with 75,000 pupils, and vocational schools account for a similar number. Thus well over half the total number of schools that were open in 1939 are now re-opened. The Universities in the Zone have made good progress: Göttingen re-opened in all faculties in September, Hamburg and Münster were re-opened at the beginning of this month (November), and Bonn and Cologne are re-opening in all faculties for the Winter term. Kiel has been handicapped by more serious destruction, but is re-opening in part. A special importance attaches to the de-nazification of the whole system of higher education, and particular attention is consequently paid to the political as well as the academic records of those seeking re-employment.

A word about youth movements. Our aim is to stimulate and sponsor a fruitful development of free and creative youth activities. The Churches have shown much interest in this matter and some progress has been made. Any sudden re-introduction of the Scout Movement would have been undesirable for obvious reasons; not all nations are able to keep it on the right lines. Much has been said about the extent to which German youth can be "reclaimed." The male side seems at this stage to be more amenable to new ideas, and more difficulty is experienced with regard to the "female of the species" which is notoriously more dangerous. Some say that nothing will really win them away from Nazism, to which many of them cling with an emotional and blindly irrational intensity. That, however, is a negative attitude which we cannot afford to adopt, and something must and is being attempted.

The work of locating and safeguarding German monuments and works of art has gone on steadily, and the sorting out of collections in their temporary repositories is a large task. So, too, is the separation of works looted from Allied Countries so that restitution may be effected; accommodation and transport are also problems. New finds are still being reported.

Apart from formal education and consciously cultural activities, much must inevitably be done towards the regeneration of the German mind through the media of Press, broadcasting, entertainment and publications. The main task is one of stimulating in Germans a sense of direction, purpose and responsibility, the responsibility which each of them has for the future of Germany, and here one of the main problems is encountered: how to delegate responsibility for such important instruments as Press and broadcasting? The proposed solution is to license selected German producers of paper, publications, music and drama and other entertainments, and they will operate under general instructions and be liable to have their licence revoked if the instructions are disobeyed.

With regard to the Press, our ultimate aim is to produce a daily newspaper for every five inhabitants of the British Zone, but owing to shortage of newsprint this

will not be achieved for many months. In the meantime twelve twice-weekly newspapers are being published in the British Zone and one thrice-weekly in Berlin, with a combined circulation of over four and a half million. A number of daily newsheets is also being produced. A British-directed news agency, the output of which is also available to British Press correspondents, has been established at Hamburg for the collection, processing and dissemination of news from all over the British Zone.

The aim so far as broadcasts are concerned is to provide a service by Germans under British direction which shall cover the whole Zone. Licensing is obviously a difficult matter in this case, but Radio Hamburg is now giving more and more scope to Germans for producing programmes, contributing talks and discussing their problems. Radio Hamburg, together with the transmitter at Cologne and one in preparation at Hanover, should provide reasonable coverage for the whole Zone.

At present there are 740 cinemas operating in the Zone, and these show carefully vetted German films together with Allied films as far as resources permit. There are also sixty Mobile Units operating in villages and districts where there are no cinemas. Music, opera and ballet are already being produced by Germans and plays will be produced subject to pre-censorship. The number of theatres is increasing, and by the end of October, twenty-four were performing nightly for German civilians. Production of books will be limited for some time by the shortage of paper and printing facilities. Bookshops and commercial libraries, however, are beginning to function subject to our general guidance and instructions.

Displaced Persons and Refugees

I am now coming to the end of what I have to say, but before I come to my general conclusion there is a very important branch of our work in which a vast amount has been done, much of it most unostentatiously. I refer to the work carried out in connection with Displaced Persons, Prisoners of War and Refugees. Our accepted principle is that there is no such person as an unrepatriable ; repatriation is merely a question of time. By the end of October well over one and a half million displaced persons had been repatriated, including over 900,000 Russians. That leaves over half a million in the Assembly Centres, the vast majority of them Poles. The Joint War Organization of the British Red Cross and Order of St. John and other voluntary bodies working under the aegis of the British Red Cross now have a total of fifty-three teams operating in the Zone, forty-three of which are Relief Sections. The total number of U.N.R.R.A. teams now deployed is as large as 156. All these U.N.R.R.A. and Joint War Organization teams are rendering most valuable assistance. Arrangements to hand over to U.N.R.R.A. responsibilities for the administration of displaced persons' camps are now well advanced and a carefully phased transfer has already begun.

It is our endeavour to give displaced persons a higher standard of food and clothing than that of the Germans. Available imported clothing is being supplemented by the clothing levies already mentioned. Their daily ration averages 2,200 against the German average of near on 1,500 calories, and this includes Red Cross parcels. Extra milk and suitable baby foods are provided for expectant mothers and children.

Nearly every camp with children now has its own school, and 200,000 text books in appropriate languages are being printed. Many camps have their own workshops. Ten per cent. of all seats in German Universities have been reserved for Displaced Persons, and in addition it is proposed to start two " Camp Universities." After

due screening, ex-inhabitants of concentration camps will get priority of employment and accommodation, extra food, clothing and financial aid. The main tasks in the camps are those of reducing overcrowding, increasing privacy for families and space for recreation.

The Refugee and Evacuee problem is one of great dimensions. We have estimates of fair reliability regarding the German evacuees due for repatriation to the British Zone from the American and French Zones, from Austria and certain countries outside Germany. These total about one and a third millions. The estimates of numbers of refugees from Poland, Czechoslovakia, Austria and Hungary are much greater—three and a half millions from Poland and 3,150,000 from the other three countries. The allocation of responsibility for all these refugees for the coming Winter has now been agreed upon, and whereas the British Zone is to accommodate one and a half millions of them, the Soviet Zone is generously accepting the heavy commitment of two and three-quarter millions, the American Zone two and a quarter millions, and the French Zone 150,000.

The total influx of refugees and evacuees into the British Zone is thus expected to total over two and three-quarter millions, and those who arrive this Winter will come into a crowded Zone short of food and coal and hundreds of other things. They are, of course, utterly dependent and add a heavy burden to an already weak economy. There is no alternative and they must be accepted. True, we shall be returning to other Zones the Germans belonging to them, but at the end of the inter-Zonal exchange our balance sheet will certainly show a heavy increase in population on the debit side.

Since July there has been a varying flow of refugees from the East, and now the influx proceeds in a fairly orderly manner, averaging 14,000 a day. Transit Centres are established on our side and here the incoming refugees are sorted, documented, dusted with D.D.T., fed and sent on by rail for dispersal. Efforts are made to shepherd them away from the " black " areas, such as the Ruhr, but many subsequently work their way or drift back to the ruins of their home towns. Perhaps our new measures restricting movement will help to reduce this senseless drift which only aggravates the situation.

Conclusion

What are the Germans thinking of their present and of their future? Many look for the reasons for their lot in the deeds of others, but few admit their own responsibility. While as a nation they still undoubtedly feel no sense of guilt, and fail to realize that they themselves are responsible for the Government they chose, all are beginning to realize what total defeat really means, what their adventure—the gains of which they enjoyed when almost on top of the world, and defended bitterly as success became a rarity—what it has really cost them: in lives, in their best manpower; in national wealth, the intricacy of modern cities; in industry and all forms of great industrial capacity. They know well that they have lost more than the work and wealth of a whole generation, and whoever among them is to blame, they must pay, each one of them. Many among them, perhaps too close to defeat to see things clearly, feel that this time the gigantic gamble has been so great as to wreck their national future for all time. One thing is certain, whatever we may do to help them towards sanity and normality of living, and it is this, that their future lies in their own hands and they themselves must work at it.

I have purposely confined my survey of Military Government to the British Zone. Time will not allow that I should cover the wider problems of the government

of Germany as a whole by the four Powers represented on the Control Council. It is, however, right that I should remind you that there is this wider picture, that we look upon our task as something more than a Zonal one and feel that we are helping to shoulder our responsibilities for the sake of Europe as a whole, as part of an attempt to restore something of our great common heritage which was so nearly swallowed up in disaster. And that is why it is no exaggeration to say that many of those now in the Zone have something of a sense of " mission," and, though in many cases the results of hard work are scarcely apparent to the doer, there is some sort of trust that the effort is not lost.

It is perhaps justifiable to say that up to now the general result has not been bad, and if we have in some directions achieved success it is largely due to the foresight of the original staff of the Civil Affairs Military Government School at Wimbledon and to the Control Commission planners in Norfolk House—both of whose achievements in this respect have been largely unsung. It is also due to the common sense and hard work of a multitude of junior or comparatively junior officers and civilians and men and women on the ground, and finally to continuous assistance from the commanders and staffs and regimental officers and men of the 21st Army Group—now known as the British Army of the Rhine.

THE CHAIRMAN

Ladies and gentlemen, I am sure you will agree with me that we have had a most lucid and informative, and amazingly comprehensive talk. Perhaps it is just as well that we are not going to have any questions, because the Lecturer has covered such a lot of ground that I am quite sure there are a great many people here who would have liked to put questions to him and get further information about the many subjects he introduced —the restoration of the Ruhr and the industries being restored there, the battle of the Winter and so on ; all questions in which we are intensely interested because they do directly or indirectly affect us ; but there is not time.

This lecture has been of particular interest to me because I did happen to find myself in Germany in the early days and saw, so to speak, the raw material upon which this Military Government organization had to work. Therefore I can appreciate—and I know there are others here who can, too—the amazing way in which this organization has built itself up, tackled these frightful questions and made such great progress in solving them in the past few months. It is quite extraordinary to hear what has been done.

I think it is fair to say that never before in history has a victorious army turned so immediately and deliberately and effectively from its business of conquest and destruction to the work of reconstruction, and incidentally of rescuing its one-time enemies from anyhow the very worst results of their own criminal folly. I think that must strike one, how we have set up this great organization to deal with this shattered Germany. It is quite a novel feature of modern war. Of course, the repercussions of modern total war are quite limitless, and the victorious nation has not reached its goal when the last shot is fired. It has at once to turn to deal with the conditions a modern war create, and until it has dealt with those many complex problems, about which we have heard to-day, it cannot reap the full results of its own victory. It is upon the work of this Military Government organization that it will be judged as to what we have got out of this great conflict now past.

It is interesting to note that the agent of the country in carrying out this vital task of finishing off the War and dealing with this problem is largely the Army, and I wish that were more widely understood. I wish a wider audience could have heard this talk so that they might appreciate the extraordinary burden which the Army is still bearing and what it has already achieved.

The customary votes of thanks to the Lecturer and Chairman were carried with acclamation.

TANK AND ANTI-TANK

By Brigadier R. M. P. Carver, C.B.E., D.S.O., M.C.

THE present seems to be an appropriate time at which to review the development of tanks, Allied and Axis, during the War and of the anti-tank weapons produced by either side. It is an interesting story, the truth of which has been distorted by controversy and ignorance. One major cause of misunderstanding has been the claim to have produced a weapon which to the soldier is useless until not only has he received it in the field in sufficient numbers to replace its predecessor, but has also been trained in its use, and has with it the accessories and behind it the spares necessary to maintain it. It was, I think, Mr. Duff Cooper, then Secretary of State for War, who in 1935 said that we had the best anti-tank gun in the world. He was alluding to the two-pounder. If there were any fit to fire at that time, they were not outside the experimental ranges. In the Middle East, then the threatened theatre of war, they were not in service until the end of 1940. Misleading statements of that kind are the cause of controversy which has confused the issue on countless occasions.

I do not intend in this article to mention Russian or Japanese tanks: the former because we do not know enough about them; the latter as they are not worthy of notice, even if I were familiar with them, which I am not.

France, 1940

In 1940 when Germany attacked the Low Countries, we had the following tanks in service:—

(a) *Matilda, Mark I.* A three-man I tank mounting a 2-pounder and co-axial .303 Vickers machine-gun. Well armoured for its day with 75 mm., but very slow, under-powered, unreliable and with a very short range. Not more than about sixty of these. No spares.

(b) *Cruiser, A.9.* Forerunner of the Valentine: originally designed by the late Sir John Carden before his death in 1936. Crew of six. Armour about 14 mm. One 2-pounder gun and three .303 Vickers machine-guns. Range about 100 miles. Speed 20–25 m.p.h. Unreliable on account of track defects. No spares and often not the full complement of weapons. Nevertheless the best tank in the service of either the British or the French. About one hundred of these.

(c) *Light Tank, Mark VI, VI–B or VI–C.* Crew of three. Armament one .5-in. and one .303-in. Vickers machine-gun. Armour 14 mm. Very poor cross-country capacity. 35–40 m.p.h. on roads. Reliable, having been in service since 1935. Range about 100 miles. Purely a reconnaissance vehicle, but provided in fact the equipment of the vast majority of tank units.

In the same campaign the Germans used the following types of tank:—

(a) *Pz–kw, Mark I.* A light tank inferior to our own in armament, having only two 7.92 mm. machine-guns. Armour 14 mm., equal to our own. Cross-country capacity slightly better. Crew of three.

(b) *Pz–kw, Mark II.* An improved light tank, carrying one 20 mm. and one 7.92 mm. machine-gun. Armour 15 mm. Better cross-country capacity. Still really only a reconnaissance vehicle. Crew of three.

(c) *Pz-kw, Mark III.* Cruiser-type tank. Originally carried one 37 mm. gun, equivalent to our 2-pounder, and two machine-guns. In the Spring of 1941 it certainly had a 50 mm. gun. I do not know whether in 1940 any were equipped with 50 mm. guns. Armour 30 mm. Crew of four. Good cross-country capacity and reliable.

As far as quality went, therefore, we would appear to have been pretty well on a level with the Germans, though our Cruiser was thinner than their Mark III. In quantity we were hopelessly at a disadvantage. Light tanks were the only ones available in any quantity. The Matildas were handicapped by their reliance on transporters for any major move. The only transporters available were railway flats, which were immobilized by the German Air Force. Wherever they fought German tanks they were successful, until overcome by weight of numbers and outmanœuvred as a result of their slow speed, short range and unreliability.

As far as weapons to deal with German tanks were concerned, quantity and inferior armour-piercing ammunition were the main disadvantages. The 2-pounder, whether in the tank or on a ground mounting, would knock out the German Mark I or Mark II at ranges up to 1,000 yards, and the Mark III up to 500 yards, if not slightly more. The Boyes anti-tank rifle and the Vickers .5-in. machine-gun would penetrate the Mark I or Mark II at a range of about 400 yards, but were useless against the Mark III. The German 37 mm. anti-tank gun was equivalent to our 2-pounder and could knock out the Cruiser at about 500 yards, the Light Tank at 1,000, but made no impression on the Matilda. The 50 mm. anti-tank gun would knock out the Cruiser at 2,000 and the Matilda at about 800 yards.

Generally speaking, therefore, in this campaign it was quantity rather than quality in both tanks and anti-tank guns which was our chief disadvantage, though in the 50 mm. anti-tank gun the Germans were a considerable step ahead. I am not certain that they did in fact have them in this campaign ; if they did, it was not in very great numbers, the 37 mm. being still their standard tank and anti-tank gun. In armour the Mark III was twice as thick as the A–9, but less than half as thick as the Matilda.

Libya, 1940–1941

At the beginning of the campaign against Italy in June, 1940, we had in Egypt approximately the following numbers and types of tank :—

(a) *Cruisers, A–9 and A–10.* About sixty. Many of these, however, were without their 2-pounder and at least one machine-gun. Much other necessary equipment, such as sighting telescopes and wireless sets, was also "to follow." There was a complete lack of spares. They were not subject in the desert to the track trouble experienced in France and were generally fairly reliable, after original cooling and air-cleaning troubles had been solved. The A–10 was substantially the same as the A–9 with two instead of three machine-guns, and armour of 30 mm. instead of 14 mm.

(b) *Lights, Mark VI, VI–B or VI–C.* About 200, of which not more than 160 were in the field. Reliable apart from track trouble, which depended for its solution on a vast reserve of locally-made track pins.

The only Italian tanks up to February, 1941, were the Mark XI, a poorly armoured unreliable Cruiser mounting a 37 mm. gun, of which there were very few, and the C.V–3 which could hardly be called a tank at all, a miniature machine-gun carrier which was little more than a death trap. As far as both quantity and

quality went, therefore, we were definitely superior. For anti-tank guns we had two batteries of 37 mm. Bofors; their chief disadvantage lay in the fact that the ammunition for them was made in Poland and, therefore, once we had fired off what we had, the guns were useless. There were also some 2-pounders in the support company of the 1st Royal Northumberland Fusiliers at Mersa Matruh. In reserve were the old pre-war medium tanks of 6th Royal Tanks, some dug in in the defences of Matruh and some manned by the Egyptian Frontier Force in Siwa!

In October, 1940, the scale was turned even further in our favour by the arrival of the 7th Royal Tanks with some fifty Matilda Mark IIs, a great improvement on the Mark I, though with the same gun and armour; the 2nd Royal Tanks with fifty to sixty Cruiser A–13s and the 3rd Hussars with sixty Light Tanks. The A–13 was the first Cruiser with Christie-type suspension, the pilot models of which had been made by Nuffields in 1936. In speed it was a great improvement on the A–9 and A–10, but had only 14 mm. armour and the same armament.

At the start of the offensive on 8th December, 1940, we had in the field the following tanks:—

Matilda Mark II	50
Cruisers A–9, A–10 and A–13	About 170
Lights	About 160

The Italians never produced more than about 100 M–11s, and always in such scattered groups that they were never a problem at all. For anti-tank guns we had more 2-pounders, which had replaced the 37 mm.

The Matilda was Queen of the battlefield. The only things which could stop it were a mine or a direct hit by a field gun at short range. The real problem of the campaign was maintenance. By the time we reached Tobruk, tank strength had fallen to sixteen Matildas, fifty Cruisers and fifty Lights. Only a small proportion of the losses were battle casualties. For the final battle of Beda Fomm on 8th February, 1941, the enemy produced about forty new M–13s, a much improved Diesel-engined Cruiser with a 37 mm. gun. As, however, he only had scratch crews, who had snatched the tanks straight from the dockside in Benghazi, and as they were Italians, they proved little trouble to us. After the battle of Beda Fomm it was found that only twelve Cruisers and forty Light Tanks fit for a further 100 miles could be produced. By that time the 2nd Armoured Division had arrived, bringing, apart from what went to Greece, some sixty A–13 Cruisers and sixty Lights, the latter being kept at the base for reinforcements.

When Rommel attacked from Agheila in April, 1941, with his 5th Light Panzer Division, made up of Mark IIs and Mark IIIs, he was faced by the 3rd Hussars with about forty Lights and the 6th Royal Tanks with about forty Italian M–13s. The 5th Royal Tanks with about fifty Cruisers, which had not been new when they left England, were in G.H.Q. reserve at Tobruk. They were ordered up in a great hurry, too late. Many broke down and more ran out of petrol, with the result that they hardly affected the battle at all. Meanwhile mixed Light and Cruiser tanks and about fifteen Matildas were rushed up to Tobruk, where they became part of the encircled garrison.

Greece and Crete, 1940

The 1st Armoured Brigade which went to Greece had some sixty Cruisers (3rd Royal Tanks) and the same number of Lights (4th Hussars). In addition, the Divisional Cavalry regiments of the 2nd New Zealand Division and the 6th

Australian Division had a number of light tanks. Our Cruisers were mostly A–9 and A–10, which suffered very badly from the track trouble they had experienced in France, but not in the desert. For anti-tank guns we had 2-pounders, but not in profusion. The Germans produced many Mark IIs and a higher proportion of Mark IIIs, all now with the 50 mm. gun. They may have produced some Mark IVs: I am not certain. If they did, there were not many. The Mark III with the 50 mm. was definitely superior to anything we had, and we were hopelessly outnumbered. The few Cruisers we had were kept moving from one threatened place to another, and mechanical breakdowns were responsible for the majority of losses, becoming total losses as the withdrawal began.

To Crete went four Matildas, which were landed at the opposite end of the island to which they were most needed. Before the eastern Mediterranean route was closed, a mixed party of Matildas and Light tanks, amounting to about thirty in all, were sent to Malta. Known as "Malta Tanks," they were chiefly used for clearing wrecked aircraft off the aerodrome runways.

Eritrea: Winter, 1940–1941

One squadron of Matildas took part in the Battle of Keren with decisive results. As in Libya, the Matilda, on the few occasions when it was possible to produce it on the battlefield, was irresistible. Apart from this, few tanks were used by either side in the campaign.

Libya: June, 1941

One of the most significant battles of the war, as far as tank and anti-tank development was concerned, was fought on the Egyptian frontier in June, 1941. It was called "Battleaxe" and was a full-scale attempt to relieve Tobruk. It ended in complete and utter failure. As a result, hardly anyone outside the Middle East was allowed to know about it, which was a pity as there was much to be learnt from it. For the first time against the Germans we had a full-scale tank versus tank battle, in which we were superior in numbers. The German tanks were almost all Mark III equipped with 50 mms. We had about 100 Matildas and about 150 Cruisers. The 50 mm. was much superior to our best armament, the 2-pounder. The armour of the Mark III was about equivalent to that of the A–10, but thicker than that of the A–13. The armour of the Matilda was double the thickness of the German.

The main cause of our defeat was the German use of the 88 mm. anti-aircraft gun as an anti-tank gun. The slow, unreliable Matildas were slaughtered by them. The Cruisers were outgunned by the Mark IIIs and also blown to pieces by the 88s. In addition, the Mark III with its 50 mm. could knock out our 2-pounder anti-tank guns, impossible to conceal in the desert, from ranges at which it was itself invulnerable to them. Our only effective anti-tank weapons were now the 25-pounders of the Royal Horse Artillery diverted from their field role.

The lessons to be learnt from this battle were:—

(a) That the only limit to the range at which the 88 could knock out our tanks was visibility—up to 3,000 yards. Therefore only artillery could deal with them. Artillery support of tanks was therefore necessary at all times.

(b) Our tanks, with the exception of the Matilda, could not fight a tank versus tank battle on equal terms with the German Mark III.

(c) The Matilda was too slow and unreliable to be used as a cruiser tank in the desert.

(d) The 25-pounder was the only effective anti-tank weapon we had.

The result, therefore, was an immediate need for an increase in supporting artillery, partly for the support of tanks, partly for use as anti-tank weapons. This need was not met.

Syria: July, 1941

No tanks took part in the Syrian campaign other than Light tanks of the 6th Australian Divisional Cavalry. The French produced some Renault tanks equipped with 37 mm., which could be dealt with adequately by 2-pounders. Their presence came as a surprise and they caused considerable casualties when they first appeared, the British troops opposing them having only anti-tank rifles—those useless weapons, which were for so long an unnecessary burden to the P.B.I.

Libya: Winter, 1941–1942

At the opening of the "Crusader" operation in November, 1941, we had approximately the following numbers and types of tank actually in the field :—

(a) Matildas, Mark II	... ...	100
(b) Valentines	... ...	50
(c) Cruisers, A–10 and A–13	... ...	150
(d) Crusaders, A–15	... ...	170
(e) General Stuarts (American)	... ...	170 Total about 650.

Inside Tobruk we had the 1st Royal Tanks with a mixed collection of fifty odd tanks, varying in type from Matilda to Mark VI Light, and the 4th Royal Tanks with fifty Matildas, brought in by landing craft during the preceding month.

This operation, therefore, saw the arrival of three new types, the Valentine, the Crusader and the Stuart, the Stuart being the first American tank with which we were equipped. Details of these tanks were as follows :—

(a) *Valentine.* Development from the A–10, but with much increased armour. Armament still 2-pounder and two Besa 7.92 mm. machine-guns. Armour 60–65 mm., about double the thickness of the A–10. The engine being the same, the Valentine was considerably slower. It was fortunately very reliable. Crew of four.

(b) *Crusader.* Development from the A–13. Armament still 2-pounder and two Besa 7.92 mm. machine-guns. Armour 40 mm. Fast, well-sprung, but hopelessly unreliable, involving constant attention by drivers and fitters. Crew of five.

(c) *Stuart.* A small light tank, with a badly designed fighting chamber. Armament 37 mm., almost exactly equivalent to the 2-pounder, and two .3-in. Browning machine-guns. Armour 40–45 mm. Its great advantage was its extreme reliability. Its great disadvantage was its very inadequate petrol tank capacity, giving an endurance of only forty miles. Crew of four, very cramped. Although its only advantage over the Crusader was reliability, it was much preferred by many.

For anti-tank guns we had 2-pounders in rather greater numbers than before. The only better anti-tank gun was in the 1st South African Division. Their anti-tank batteries each had a troop of 18-pounders, old field guns converted.

Rommel had three armoured divisions, two German—the 15th and 21st (the old 5th Light)—and one Italian, the Ariete. Each had about 150 tanks. The majority of the German were Mark III, about equal in armour to the Crusader and Stuart, but better armed with 50 mm. A new arrival was the Mark IV. This had slightly thicker armour than the Mark III, but not as thick as the Valentine. It was equipped with a short-barrelled low velocity 75 mm., designed as a close support H.E. weapon, but also very effective as an armour-piercing weapon. These made up less than a quarter of the total. There were also a small number of Mark II light tanks. The Italian were all M–13s, equivalent to the Stuart, but with weaker armour. For anti-tank guns the Germans were liberally equipped with 50 mms. and 88 mms., the Italians with 37 mms. and 47 mms.—neither very effective guns.

We therefore outnumbered the enemy by about three to two in tanks. The Germans had a slight superiority in armour and a definite superiority in tank guns and anti-tank guns. The proportion of supporting artillery to tanks was still inadequate on our side. Only one armoured brigade—the 4th Armoured Brigade, equipped with Stuarts—had its own regiment of Royal Horse Artillery.

From the beginning of the series of tank battles which dominated the "Crusader" operation, it was obvious that we were at a great disadvantage, our tanks being vulnerable to the enemy's tank and anti-tank guns at ranges at which we could not penetrate their tanks. At the end of the first week the three armoured brigades of the 7th Armoured Division were reduced from a strength of about 450 to a total of fifty tanks. By remarkable efforts of recovery, repair and reorganization, this number was quickly reinforced; but after the relief of Tobruk there were only enough tanks and crews to man one brigade. In spite of our inferiority in the quality of tanks and in quality and proportion of anti-tank guns to other arms, Tobruk was relieved, and Rommel chased back to Agheila, being reduced to a strength of eight tanks at one time before reinforcements reached him at Benghazi. It was a remarkable feat, achieved by courage, determination and skill, helped not a little by Rommel's mad and ineffective dash to the frontier at the crucial period of the battle. The outstanding lessons of the operation were the need for a better gun in our tanks and the need for ample and intimate artillery support for tanks.

Burma, 1942

The only tanks which took part in the campaign which ended in the loss of Burma were two regiments, the 7th Hussars and 2nd Royal Tanks, equipped with Stuarts. They proved adequate to deal with anything the Japanese could bring against them either in the way of tanks or anti-tank guns, but were of course severely handicapped by the nature of the country and the conditions of the campaign.

Libya: Summer of 1942

Our tank strength in the Desert in May, 1942, when Rommel attacked, was roughly as follows:—

Matilda, Mark II	150
Valentines	150
Crusaders	200
Stuarts	100
Grants	150
Total	750

In addition there was a brigade in G.H.Q. reserve which was brought up in the middle of the battle with a further fifty Grants and 100 Stuarts. The General Grant was an American tank, originally designed as a heavy tank for the close support of infantry. For armour it had 75 mm. on the turret and 45–50 mm. on the hull. Its armament consisted of one 37 mm. in the turret and one 75 mm. in a sponson in the hull with limited traverse, and two .3-in. Browning machine-guns. Its advantages over previous tanks were its slightly thicker armour, its 75 mm. gun, its reliability and the ample room for the crew. Its disadvantages were the fact that its main armament was low down in the tank, with the result that almost all the tank had to be exposed before the 75 mm. could be fired, and that it only had limited traverse; in addition it was very bulky, making a big target, and had an endurance of only about 70 miles. Of the three brigades equipped with a proportion of these tanks, two had only received them just before the battle started. Their gunnery mechanism was quite different to any we had had before and entailed considerable training.

For anti-tank guns a few of the new 6-pounders had arrived just before the battle and had been issued to the armoured divisions, but many gunners had not had an opportunity of firing them.

The enemy had about 300 German and 150 Italian tanks. The German were Mark III and Mark IV, with a greater proportion than previously of the latter. Both had reinforced their armour, but the armament remained the same, though in many cases the 50 mm. of the Mark IIIs was of an improved type with a higher muzzle velocity. The Grant was the equal of the Mark IV, though a more difficult tank to fight, and the superior of the Mark III. The Italian tanks were still M–13s. In anti-tank guns we now had a few 6-pounders, which were most effective against all enemy tanks in spite of their very bad sights; but the Germans now had 88 mms. and the improved 50 mm. on a much more lavish scale. At one period in the battle round Knightsbridge we did use heavy anti-aircraft guns as anti-tank guns with great effect. The advent of the Grant and the 6-pounder was extremely valuable, but the great majority of tank and anti-tank guns were still 2-pounders and at an even greater disadvantage *vis à vis* the Germans than in the Winter. For the first three weeks of the battle the enemy's losses in tanks were generally in the same proportion to his total strength as our own. On 16th June, however, we lost almost all our remaining strength of Grants to his anti-tank guns, while he lost practically no tanks; from then on the balance of superiority in tanks was heavily loaded in his favour.

In the fighting in July, which ended in the stabilization of the line South of El Alamein, we had a definite superiority in numbers of tanks, a complete new brigade of Valentines having arrived, but only a small proportion were Grants. We were still relying mainly on Matildas, Valentines, Crusaders and Stuarts. More 6-pounders were available, in spite of the heavy losses round Tobruk, but the 2-pounder was still predominant.

El Alamein

In the battle on 31st August, 1942, on which Rommel pinned his hopes of reaching Alexandria, we had available approximately 200 Grants, 100 Crusaders, 100 Stuarts and 100 Valentines. A few of the Crusaders were equipped with 6-pounders, otherwise there was no new type of tank on our side. Six-pounder anti-tank guns were by now fairly plentiful and had almost entirely superseded the

2-pounder. A new high velocity shell had been produced for the 2-pounder, but it was still hopelessly inadequate as an anti-tank gun. Rommel employed about 300 German tanks, almost all Mark III and Mark IV, mostly the latter. The latest improvement on his side was the Mark IV Special, equipped with the long 75 mm. (Kwk–40), designed as an anti-tank gun and superior to the 75 mm. in the Grant and the 6-pounder. All the Mark IIIs now had the long improved 50 mm. Both were carrying extra armour and were considerably heavier than the original design, a fact which caused them increasing mechanical trouble. This time there was no surprise; he had little space to manœuvre and we were well ensconced in an excellent battle position. He ran his head right into it and our 75 mms. and 6-pounders took heavy toll, though we realized that the Mark IV Special was a tank to be reckoned with.

The Battle of Alamein itself was a great milestone in tank development from our point of view, as it saw the advent of the Sherman tank. This was a great improvement on anything that had gone before. Its armour was 65–75 mm. Its gun was a 75 mm. of what was then considered high muzzle velocity, mounted in the turret. Firing armour-piercing shell, it was superior to the Mark IV Special. The guns of each were just about equal in performance, but the Sherman was better armoured. Firing H.E. shell it could compete with the 88 mm. anti-tank gun. It was reliable, roomy and excellently designed for fighting.

By now the 6-pounder anti-tank gun had almost entirely superseded the 2-pounder, and the proportion of anti-tank guns to other arms was liberal. In addition, a small proportion of Crusaders were equipped with 6-pounders. The Matilda had at last disappeared except for thirty-two mine-clearing flail tanks, the first ever to be used. Our approximate tank strength at the beginning of the Battle of Alamein was 400 Shermans, 130 Grants, 200 Crusaders, 120 Stuarts and 200 Valentines. Of these 1,050 tanks, 538 carried 75 mm. guns and 650 were American. The Germans had about 400 tanks and, in addition, a number of self-propelled anti-tank guns. About half of these carried the long 75 mm. Kwk–40, the rest 50 mm. For anti-tank guns they had a large number of 88 mms. and 50 mms. The 75 mm. towed anti-tank gun had not yet appeared. With the Sherman we had at last not only a vast superiority in numbers, but also a superiority in armour and armament. The 88 mm. remained the greatest menace; it was defeated by artillery support and by H.E. fire from Grants and Shermans. There is little doubt that the Sherman was one, probably the main, deciding factor in our victory.

Tunisia

The British First Army introduced the Churchill to battle for the first time, except for four tanks tried out at Alamein. With armour of 87–100 mm. and a 6-pounder gun it was a considerable improvement on the Valentine, which it succeeded as the British tank designed primarily for the support of infantry. It was, however, unreliable at that time. Its armour was no real protection against the 88 and was vulnerable at 500 yards to the new 75 mm. anti-tank gun, which the Germans first produced in Africa in January, 1943. Its 6-pounder gun was able to compete with the Mark IV Special, but was useless as an H.E. weapon.

When it first landed, the British 6th Armoured Division was equipped with Crusaders, which it thankfully exchanged for Shermans in February.

At the Battle of the Mareth Line in March, 1943, the Eighth Army had three armoured brigades equipped with about two-thirds Grants and Shermans, and

one-third Stuarts and Crusaders, an increased proportion of the latter carrying 6-pounders. In addition there was a brigade of Valentines, a small proportion of which were now also equipped with the 6-pounder. For the Battle of Medenine, which preceded it, we had a few of the new 17-pounder anti-tank guns, but they did not come into action. In his disastrous attack on this occasion Rommel used three Panzer divisions, mostly equipped with Mark IV Specials. By now he also had a number of self-propelled guns, mostly 75 mm., on a variety of chassis—Czech, French and German. He was defeated mostly by 6-pounder anti-tank gun fire and concentrated artillery fire, our own tanks hardly being engaged at all. Where they were engaged, the 75 mms. of the Shermans and the 6-pounders of the Crusaders did great damage. The Americans with the First Army were equipped with Shermans and Stuarts.

It was not until after crossing the Wadi Akarit in April that the Eighth Army met its first Tiger. This formidable tank had 82–110 mm. of armour and carried an 88 mm. gun. It was, therefore, more heavily armoured than the Churchill, which appeared in the field about the same time, and very much better armed. The only anti-tank gun we had which could deal with it was the 17-pounder, of which there were very few at that time. Luckily there were also few Tigers. They were not, we believed, reliable. By the time we in the Eighth Army met them, the Germans had already lost the campaign except for the final stand round Tunis, and they were chary of risking the loss of precious Tigers. They therefore inclined to withdraw when heavily shelled and did not prove the nuisance they might and could have been. At the end of the campaign in Tunisia we had an overwhelming superiority in numbers of tanks, an increasing number of which were Shermans, which had proved the superiors of all German tanks we had met except the Tiger. We had evolved tactics, employing the intimate co-operation of H.E. fire from artillery and tanks, directly or indirectly fired, which defeated the normal ground anti-tank gun, 50, 75 or 88 mm., in open country. The P.I.A.T. in the British Army and the Bazooka with the Americans had begun to replace the obsolete anti-tank rifle as the light short-range personal anti-tank weapon of the infantry, both firing hollow-charge H.E. projectiles. The 17-pounder had just begun to appear and was for a short time the best anti-tank gun on either side in the field. At any rate it had proved capable of dealing with the Tiger at over 1,000 yards.

Sicily and Italy, 1943

The end of the North African campaign saw the end of the Grant, the Crusader and the Valentine. The Stuart remained on the scene, in small numbers in the British Army, in greater quantity in the American, purely as a reconnaissance vehicle. It was definitely now a light tank. All the British, Canadian and American tank units which took part in the campaign in Sicily and in Italy up to the end of 1943 were equipped with Shermans throughout. The Churchills remained in North Africa and did not come over to Italy until 1944. The Germans produced few tanks in Sicily and not many were seen in 1943 in Italy, except in the counter-attacks at Salerno and on the River Sangro. The country and the fact that the Germans were permanently on the defensive gave an added importance to their anti-tank guns. The most notable changes were the great increase in self-propelled anti-tank guns of all calibres up to 105 mm. Inconspicuous, mobile and armoured all round and overhead against shell fragments, they could not be defeated by the tactics of H.E. fire used in North Africa. In addition, the thick country and the introduction of flashless powder made it very difficult to locate guns when they fired. The ranges

at which most tanks were knocked out was now about 100 yards instead of 1,500, which had been the average in Africa.

The other main advance in German anti-tank weapons was the first appearance of the 88 mm. designed purely as an anti-tank gun, no longer dual purpose anti-aircraft and anti-tank. It was lower, more mobile, had an armoured shield, improved sights and a considerably improved performance. The Germans also produced in larger numbers different types of light taper-bore anti-tank guns. These fired a small projectile which had a considerable power of penetration. On our side more 17-pounders were available and we had also a number of American self-propelled 76 mm. anti-tank guns, called by the Americans " Tank destroyers " or M–10s. These had a better armour-piercing performance than the 75 mm. in the Sherman, but not as good as the 17-pounder, and were not really effective against the Tiger except at very short ranges. The Germans did not produce their version of the Bazooka in Italy until 1944, although they had long used hollow-charge shells fired from field guns.

North-West Europe, 1944–1945

The main features in the development of tanks and anti-tank guns by the time that the invasion of Normandy took place were the following :—

(a) *British*

(i) Introduction of 17-pounder in Sherman. (Ratio of one 17-pounder to three 75 mm. in fighting troops.)

(ii) Appearance of Cromwell, armed with 75 mm.

(iii) Introduction of 75 mm. in Churchill (ratio initially one 75 mm. to two 6-pounders in fighting troops and subsequently two 75 mm. to one 6-pounder).

(iv) Introduction of flame-throwing Churchill (Crocodile).

(v) Use of amphibious tanks (Shermans).

(vi) Increase of armour on Churchill.

(vii) Improvement of mine-clearing tanks and increase in numbers. Sherman Crab.

(viii) Disappearance of 2-pounder anti-tank gun. The 17-pounder now standard, with the 6-pounder replacing the 2-pounder in infantry battalions.

(ix) Increased number of self-propelled anti-tank guns. Conversion of proportion of M–10s from 76 mm. to 17-pounder.

(x) Introduction of rocket-firing aircraft.

(b) *American*

Nil, except that some Shermans were equipped with 76 mm. in place of 75 mm. and that the Stuart was relegated to reconnaissance only, though still used in larger numbers than in the British Army.

(c) *German*

(i) Appearance of Panther.

(ii) Increased proportion of Tigers and Panthers.

(iii) Vast increase in numbers of Bazooka-type weapons.

(iv) Increase in number, type and effectiveness of self-propelled anti-tank guns.

When the 21st Army Group was completely ashore at full strength its British, Canadian and Polish forces had approximately the following numbers of tanks in the field, excluding reserves outside units :—

Sherman 17-pounders	320
Sherman 75 mm.	1,400
Cromwell	390
Churchill 75 mm.	50
Churchill 6-pounder	400
Churchill Crocodile	60
Sherman Crab	120

Of this total of about 2,740 tanks, two-thirds were American. All the self-propelled anti-tank guns were American, although about a third had British 17-pounder guns in them. Not counted in this total were about 150 A.V.R.Es. (Armoured Vehicles Royal Engineers), all Churchills. Equipping Shermans with 17-pounder guns was a British idea, the conversion being carried out in England. Only British, Canadian and Polish tank units were equipped with them—no American.

As the campaign proceeded, the total number of tanks in the field declined, as the size of the British armies dwindled also. The main changes were an increase in the proportion of 17-pounder to 75 mm. Shermans, the proportion doubling by the end of 1944 ; the conversion of all Churchills to 75 mm. and an increase in the number with thicker armour ; an increase in the number of Crocodiles and the conversion of all self-propelled anti-tank guns to 17-pounder, including the appearance late in the year of a British self-propelled 17-pounder anti-tank gun on a Valentine chassis, replacing a proportion of towed 17-pounders. Later still, in the Spring of 1945, one armoured division, which had been equipped with Shermans, was re-equipped with British Comets. There were also important developments in armour-piercing ammunition. These, however, did not become effective until after the end of fighting in Normandy. The Cromwell had the same armament and approximately the same armour as the Sherman. It was smaller, faster and, unlike its prototype the Crusader, reliable. An attempt to produce a modified Cromwell, called a Challenger, with a 17-pounder in it, was initially not a success because the tank was mechanically unreliable. The unreliability was eventually overcome. The Comet, developed from the Cromwell, appeared first in the field after we had crossed the Rhine : it had improved armour and armament, as well as better cross-country capacity.

On the German side the outstanding success was the Panther. Its main armament was a long 75 mm. (Kwk–43) of performance equivalent to our 17-pounder. Although the sides of both turret and hull were considerably thinner than those of the Tiger, the front of the turret was 110 mm. and the front of the hull formed by two plates, the main glacis plate being of 80 mm. sloped at an angle of 55° from the vertical. This combination of thickness and angle made it immune from 17-pounder fire at over 800 yards. The Panther was lighter, more manœuvreable and apparently more reliable than the Tiger. The final development in German tanks was the Royal Tiger. Very few of these were ever met, only one or two before Falaise. It carried the latest type of 88 mm., with a performance considerably superior to the 17-pounder. The armour was a considerable improvement on the original Tiger, thicker and with sloping instead of vertical plates. Thicknesses and

angle from vertical were: Turret front 180 mm. at 10°, turret sides 80 mm. at 20°. Hull front: top plate 150 mm. at 50°, bottom plate 100 mm. at 50°. Hull sides and rear 80 mm. at 25°. It was a very formidable tank, but one which in view of its weight, petrol consumption and size must have presented many problems in movement to the German staff.

In addition to Panthers and Tigers the Germans had a large number and variety of self-propelled anti-tank guns, chief of which were the Jagdpanther and Jagdtiger. These carried the latest types of 75 mm. and 88 mm. guns, had very thick front plates and were armoured overhead against shell splinters. They were less conspicuous than tanks, but had only a very limited traverse. For towed anti-tank guns, 88 mms. were plentiful, but the 75 mm. Kwk–40 provided the great majority. In the later stages of the campaign, particularly beyond the Rhine, the 50 mm. and even the 37 mm. reappeared in greater quantities, but in Normandy the 75 mm. and 88 mm. were the standard anti-tank guns.

The development which caused us greatest trouble and which forced a revolution in tank tactics was the introduction on a lavish scale of the Bazooka and its smaller equivalents, the Panzerfaust and Faustpatrone. These were all different forms of hollow-charge projectiles varying in range from fifty to 200 yards, cheaply and easily produced. Right up to the very end every detachment of German infantry was liberally supplied with them; they were capable of knocking out all our tanks, even the heavier Churchills. They were especially effective in the thick *bocage* country of Normandy and in villages and woods.

On our side probably the most significant development as far as this campaign was concerned was the Crocodile flamethrower, though without the 17-pounder Sherman we should not have got far. On the German side the Bazooka and its lesser brethren and the Panther and its self-propelled anti-tank gun equivalents were the most notable. In addition we had the added advantage of the rocket-firing fighter, which was particularly effective against armoured fighting vehicles on the move on approach marches or in withdrawal. Earlier attempts to produce tank-hunting aircraft with 40 mm. cannon had not been very successful as they had to fly very low and flat to fire, which resulted in a suicidal rate of casualties from light anti-aircraft fire, and the weight and drag of the large cannon reduced their performance, making it impossible to use them as normal fighters.

Mines

I have not so far mentioned the development of anti-tank mines and means to defeat them, although they still constitute one of the most effective anti-tank weapons. There has been very little development in mines on our side; development on the German side has consisted in increasing the effect of the charge and the abandonment of the round teller mine in favour of the long Riegel type. Wooden, glass, plastic and concrete anti-tank mines have all been used by the enemy in an effort to defeat the detector which works by detecting metal. In spite of the fact that we have had mine-detectors in use since Alamein, the vast majority of all German anti-tank mines were still metal. On our side, apart from the development of the mine-detector, the most significant development was the flail tank, first used at Alamein. The Germans do not appear to have developed mine-detecting or clearing devices to any extent, probably because they were on the defensive strategically ever since the Winter of 1942. There is no doubt that development of

land mines and their antidotes has lagged far behind developments in other weapons by both sides.

Conclusion

The figures and facts I have quoted are not based on any official records. I have, however, tried to give as far as possible a true picture of the results of tank and anti-tank development, based on my own experience in Africa, Italy and North-West Europe. Although there may be minor errors, I believe what I have written to be correct enough to form a basis for coming to some conclusions as to why development took the form it did.

It appears that at the beginning of the War we were not as far behind the Germans in quality as is commonly supposed. We were, however, far behind in quantity in anything but light tanks; we had no new development immediately ahead of us which was any great advance on what we had in production; and we were not in a position to expand production rapidly. On top of that we lost all we had in France. It is not surprising that the need to produce quickly tanks, which would be capable of assisting the defence of Great Britain, took precedence in our limited capacity for production over longer term developments, and that development and production of aircraft took precedence over tanks. The failure to produce anything better than the 2-pounder as a tank or anti-tank gun until the Summer of 1942 must be put down primarily to the requirements of the defence of Great Britain against invasion, as must also the unreliability of the early models of Crusader and Churchill. It was not until after the end of the Desert campaign against the Italians in 1941 that the man in the tank began to demand a bigger gun, and not till later that he insisted that it must be a good H.E. as well as an A.P. gun. The lesson of this is that development and design must not wait upon the demands of the user, but must by imagination and foresight forestall them.

The Germans, having got well into production early in the War on the basic design of their Mark IIIs and Mark IVs, kept them in service, modifying them by the introduction of bigger guns and extra armour, until the end of the War. It was not until 1944 that they were really superseded by Panthers and Tigers, and then not entirely. Whether by accident or design, the type of tank which the Germans developed later, the Panther and Tiger, suited their book at the time. They were on the defensive and their production was limited. A smaller number of tanks with better armour and armament suited the defence; weight and size were not as great a problem to them, for they were not faced then with the problems of seaborne invasions nor of bridging. Their tanks could go by road or rail from factory to battlefield; they had the strong bridges of European roads and demolished them when they left them.

It must be obvious from this account what an outstanding part in the tank forces of the Anglo-American armies has been played by the Sherman. From El Alamein to VJ-day it has formed the basis of our tank strength. Produced in America, it owes not a little to British help in design and to the experience gained by American observers with British tank units in the early days in the Western Desert. America was not restricted by the requirements of the British for the immediate defence of Great Britain. She may have been handicapped in further development by the fact that the Sherman was completely adequate for the Pacific War, and that for that theatre there was no incentive to improve on it.

In anti-tank guns, the 6-pounder was good, but arrived too late. The 17-pounder was excellent and arrived just in time.

After the War of 1914–18 we were far ahead of any other nation in tank design. By the end of the latest war we have caught up. It is essential that reasons of economy, which were the deciding factor between the wars, do not hinder development and leave us behind again.

SIX YEARS OF ARMY WELFARE

By A Local Army Welfare Officer

FROM time to time articles have appeared in the Journal on Welfare in the Services, but usually they have been written by senior administrative officers who view the subject from the office chair. In the Army, at any rate, it is only the lowest rank—the Local Army Welfare Officer—who comes in contact with the many and diverse personal problems of Welfare: he is the "P.B.I." of the service on whom the final success of the scheme depends. On 8th December, 1939, I was appointed one of four Sub-County Social Welfare Officers (later known as Local Army Welfare Officers) for our County, the number being subsequently increased to twenty. In order to understand the scope of the work to which a busy L.A.W.O. is committed, it may be stated that my district covered an area of eighteen by twelve miles, contained two county towns, one a pre-war garrison, with some thirty villages and camps where troops were stationed, and that the average strength from December, 1939, to December, 1945, was about 18,000.

One of the most important functions of a L.A.W.O. is to effect a proper liaison between the Army and the civil population, and to settle amicably the numerous misunderstandings which occur in war-time. Nearly every complaint, request or suggestion, even only remotely connected with the "military occupation," from civil authorities or private individuals is dealt with or passed by the L.A.W.O. to the military authorities. In the early years of the War it was he (with his local knowledge) who kept the Quartering Commandant informed of suitable accommodation for billets; and in the hectic weeks following Dunkirk it was the L.A.W.O. who reported the arrival of small units to the military authorities. Directly a new unit arrived in my district, it was my practice to give the Commanding Officer all information about arrangements for interviewing soldiers, social facilities, canteens, sports equipment, and games, supply of books, etc., and any relevant advice about local inhabitants.

In my opinion the problem of the "perplexed soldier" is by far the most important branch of Army Welfare—a conviction shared by every C.O. I have met.[1] During the last six years I have interviewed over 6,000 soldiers on every conceivable subject: six tomes have been filled with notes for record purposes, and these are often required as cases recur months or years afterwards. Interviews were given at home at appointed hours, and units were visited regularly. In some formations it was the rule to send for me whenever a man received detention, as such cases often required action in connection with a man's private affairs. On one occasion I found a soldier awaiting court-martial for desertion, when in fact he had never been called up; it was a case of mistaken identity. During the first two years many cases dealing with pay, allowances, and allotments were adjusted after correspondence with the Regimental Paymaster, owing to the ignorance of young officers with detached small units about Educational, Military, War Time and Special Proficiency Pay, and their lack of understanding about London Allowance, the Unmarried Wife and War Service Grants. During these early years cases depending on the Courts (Emergency Powers) Act, Rent Restriction Act and Insurance (Protection from Forfeiture) Acts naturally predominated. Air Raid distress produced a lot of work, and

[1] "A soldier with a worry is no use to me. Settle his troubles and we will make a good soldier of him." A remark made to the writer in 1941, by a G.O.C. Division, now an Army Commander.

the sealed camps (with men cut off from their families) before D-day, with the resulting " Residue " camps, provided many a problem for the L.A.W.O. The constant stream of applications for compassionate leave (U.K. and Overseas), extensions of compassionate leave, reversions to Home Establishment, temporary release and compassionate postings never ceased. This worked up to a crescendo on the appearance of the " one man business " order in 1945.

In a busy Army Welfare District, in addition to the families of soldiers ordinarily resident in the area, there are the dependents of the men of successive Divisions and Training Regiments left behind over a period of up to six years. It is these who apply to the L.A.W.O. for the recall of the soldier from overseas whenever there are urgent compassionate reasons, and often such cases need immediate action.

One of the most important types of cases with which a L.A.W.O. has to deal is that of the soldier who asks for cancellation of family allowance owing to his wife's conduct, or who wishes for reconciliation. In my district I dealt with an average of eighty such cases each year. At the end of 1940, a C.O. asked me to give his unit a lecture on soldiers' problems including their civil liabilities. The idea caught on, and the lecture (amended yearly according to the problems most commonly confronting the soldier) was given to many units during the next five years.

No L.A.W.O. can carry on without the help of the S.S.A.F.A., whose co-operation I found invaluable. At least weekly enquiries to the Association's Secretaries were made by post, or were made locally, and reports were always promptly received. The same cannot be said, however, of the Overseas Branch, which was wont to refer the most trivial cases to the L.A.W.O., and expect him to do agency work for it. It is my experience that the interviewing of soldiers' wives should always be delegated to the S.S.A.F.A. lady, and in certain cases to the lady probation officer.

Early in 1940 our Command Army Welfare Officer asked each of us to procure the services of an Hon. Army Welfare Solicitor. The response was immediate, and in my district that gentleman dealt with very many cases, referred by me, during the last six years. In 1942 the " Free Legal Aid Scheme " was initiated by the War Office ; but, in my district no unit was willing to form a " Legal Aid Bureau " (to consist of serving barristers and solicitors) and even if they had been willing and able to do so, the " Bureaux " (and the higher Command " Legal Aid Sections ") were prohibited from implementing advice, writing letters of a legal nature, briefing counsel, appearing in Court themselves, undertaking any form of litigation, or advising on any cases involving criminal law. Before a soldier (up to the rank of sergeant only) could approach these " legal advisers,"[1] he had to complete a lengthy Army form, and when any action was needed he was put in touch with a solicitor whom he had to pay. My Hon. Army Welfare Solicitor, who gave invaluable service to soldiers (and Warrant Officers) for two and a half years (during which he briefed counsel, appeared in Court, wrote letters of a legal nature, and advised on cases of criminal law such as motoring and cycling offences, theft, wilful damage, bigamy, assault, libel, slander and perjury), refused to have anything to do with a scheme which would have inhibited his activities to such an extent as to render them useless. The G.O.C. of the Division in my district at the time was one of the first to realize the futility of the scheme and asked me to maintain the status quo, which has remained ever since. During six years I have only heard of one Legal Aid Bureau

[1] Who were specifically absolved of any responsibility for negligence ! (vide official pamphlet Pt. I, 2, d).

in my district, and that was a one-man show run by a private in an Alien Pioneer Company who had received his legal training in Buda-Pest.

Apart from the N.A.A.F.I.s, the L.A.W.O. is responsible for all the canteens in his district: in my case these numbered twenty, and they involved a considerable amount of work. No canteen can be licensed except on the recommendation of the L.A.W.O., who is responsible for seeing that proper accounts are kept for inspection, authorized rebate is handed over to District Headquarters for allotment to units using the canteen, credentials of workers are in order, and that civilians are not admitted. He must also grade all canteens according to their requirements periodically for the A.Q.M.G. (Maintenance), and inform him of any changes in his list. Two canteens in my district were closed on my adverse reports after investigation by the Food Enforcement Officer. Many people look upon voluntary canteens merely as restaurants, but their real value lies in the social contacts which they afford.

During the first Winter of the War, soldiers were sometimes benighted at a railway junction in my district and I arranged for a supply of blankets to be kept in a heated waiting room; later, an Army Welfare canteen was built on the platform, with sleeping accommodation for ten. Every L.A.W.O. has mobile canteens operating in his area, and the routing of these is his responsibility.

In an average year I received from Command, local sources, and returned by units some 2,000 books and distributed them. Indents for indoor and outdoor games were dealt with, grants for free issue being recommended in suitable cases. The provision of furniture for "quiet rooms," obtained from local sources or from County Welfare, was also my responsibility, and this had to be carefully watched when a unit left suddenly, and re-allotted after notifying the Officer i/c Barracks.

In the Summer of 1940 a few searchlight detachments arrived in my district and by November they had increased to thirty. As the sites were very scattered, this meant a big increase in my weekly unit visiting list. Special attention had to be paid to these lonely men for whom little was done by inexperienced young troop officers. Arrangements were made with the nearest house for baths and the mending of socks, etc. Sites were visited weekly and kept supplied with books, periodicals, batteries for wireless, woollens, lamp glasses and wicks, games, and materials for arts and crafts. Every site was supplied with a dog, and in nearly every case the local farmer gave permission for his rabbits to be hunted. The men lived in small Nissen huts with mud floors, or in bell tents, and there was little improvement in accommodation for the first twelve months. Their morale would have fallen to zero had it not been for the cheering visits of the good-hearted ladies of the mobile canteens, the hospitality of the nearest house, and my weekly visits.

The issuing of petrol coupons to drivers of entertainment parties, to drivers under the "Get You Home Scheme," and to officers and soldiers on leave from overseas (involving the corresponding forms) all means work for the L.A.W.O. Altogether he has five different sets of coupons to account for, including his official travel coupons and his basic issue.

About four times a year County Army Welfare Conferences were held and sometimes attended by a staff officer from Army Welfare Service. These officers seemed to understand little of the duties of a L.A.W.O. One of them asked me whether a soldier had ever come to me for advice; he appeared to be under the impression that our duties were confined to entertainments, canteens and woollens. It is the old story of the staff officer with no regimental experience. The Directorate

of A.W.S. would be more efficient if every member of it was attached to a busy L.A.W.O., for say two weeks, accompanied him on his daily round, attended his interviews at home, read all his correspondence and listened in to all his telephone calls (my annual bill for which, including telegrams, is nearly £40.) In 1941 the Director-General issued a directive to all L.A.W.O.s, exhorting them to organize canteens, concerts and cinemas on every isolated searchlight site. At that date in our County the total accommodation for each site was one small Nissen hut and three bell tents with three hurricane lamps!

The first list of Army Welfare Officers was published in 1940, and contained about 700 names, which in six years increased to 1,500. The second list, published in 1941, showed that Army Welfare was serving a useful purpose in providing a form of "Military Service" for certain individuals of military age. These Army Welfare lists showed the democratic character of the service, for Generals, and in one case a Field-Marshal, were to be found serving as L.A.W.O.s under Colonels, often of a very late vintage. Periodically amendments to the annual lists were published—a Gilbertian form of Part II Orders,in which one could trace the promotion of Woollen Captains, Horticultural Captains, Captains the Reverend, Handicrafts Captains, and just ordinary Captains. Anyone appointed Army Welfare Officer, who held no retired rank, was made a Captain at once, and he was apparently promoted Major when he felt like it. The War Office could afford to be very generous over promotions when no pay was involved. However, that all worked out very well, and every one was happy.

During 1945 I attended a large number of Medical Boards on returned prisoners of war in order to advise the latter on various problems arising from their prolonged isolation. All being local men, that is from my Army Welfare District, I was in the position of being able to deal with any subsequent difficulties that might arise.

For six years my work as L.A.W.O. has been a whole time job, and the typing of letters has rarely been completed until 11 p.m., and even after dinner and on Sundays one was not safe from urgent visits of soldiers and their relatives. There was generally at least one telephone call during every meal, and on returning from the morning round of visits there was always a list of messages awaiting one. The daily round was in fact very much like that of a busy doctor—visits, consultations at home, telephone and correspondence. We have been told that the War is over, but the work shows no sign of decreasing, and as long as there are Training Regiments, Depots, Hospitals, and Workshops (not to mention small detachments and R.A.F. Formations) in an area like mine, as long as there are troops overseas (with all the complications of leave and urgent recall), and as long as there are erring wives, there seems little chance of a respite for the L.A.W.O.

Many Army Welfare Officers (most of us are over 60) are, after six years hard work, as war-weary as their cars, which are now nearly worn out. Yet we feel that our daily labours have not been in vain when we read the Adjutant General's letter received in September, 1945:—"In no war has morale played a greater part, and the Army Welfare Services may feel justly proud that their contribution towards maintaining the morale and the efficiency of our men and women in the Services has been a very real one."

JUNGLE WARFARE

By Brigadier C. R. A. Swynnerton, D.S.O.

IN his article on " Jungle Warfare " in the August, 1945, number of the Journal Major A. S. Irwin makes what seems to me an astonishing attack on an admirable lecture by Lieut-Colonel C. J. Bradford reproduced in the previous number. I have, to the best of my knowledge, met neither of these officers and my remarks are therefore entirely without personal bias against either. My claims to join issue in this matter are based partly on a somewhat extensive knowledge of jungle in two Continents and partly on my having walked some 300 miles between December and May, 1945, through the Arakan hinterland during the final campaign against the Japanese. I also wish to preface my remarks with the statement that I fully realize that personal experiences are by no means conclusive and that true deductions can only be drawn from a general overall picture—a point which is sometimes forgotten. I make no attempt at an overall picture.

I will first state the matters on which I disagree with Lieut-Colonel Bradford. I consider that the meagre Japanese artillery opposed to us was extraordinarily efficient; their gunners never seemed to spend any rounds in registering a target, but nearly always fired for effect—and accurately—with the first round. Where they did fail was in their communications, for on more than one occasion we heard enemy guns bombarding a position as much as nine hours after we had moved on, although their infantry were fully aware that we were no longer in the old target area.

As regards the " primitive man " argument, to which Major Irwin takes such exception, I agree generally with Colonel Bradford, though I think he has put the cart before the horse in his reasoning. The Jap can and does live on next to nothing, and he really has " the fanatical idea that it is a wonderful thing to be killed in battle;" but I would not describe these as primitive instincts so much as national characteristics. Indeed I would go so far as to state that any position in which one fanatical Jap still lingers to fight is a position still held by the enemy.

I would, however, be most interested to learn whence Major Irwin gets his quaint idea of the " great fires which the African likes to build and keep burning throughout the dark hours on his native heath, protection as much against the evil and terrifying spirits as against the wandering leopard." There is a very great deal of nonsense talked, thought and written about African troops, and if Major Irwin only realized that the African likes his sleep as much as anybody else and does not sit awake all night tending fires, his argument would be much more convincing. Nor is it true to say that " the African is born in the jungle, so he'll be at home in the jungle, so he'll excel at jungle fighting." West Africa is by no means all jungle, and the great majority of the essentially fighting men, as opposed to the services, are born and bred in savannah country or the desert, and many don't even see the " bush " until they join the Army and are made to train there. Strangely enough, it is the areas which are most thickly forested that produce the literate soldier who fills the ranks of the West African Signals, Electrical and Mechanical Engineers, Army Service Corps, Intelligence Sections, clerks, etc., etc. The reason for this is that the white man with his mission schools and trading has had a much longer grip in the forest areas because they adjoin the sea.

The African, like anybody else, has to be trained to fight in jungle; but as all his ancestors have had to wage unceasing war against Nature, he begins by being far better equipped to deal with the problems presented by Nature and ends by being far more capable of building himself decent accommodation quickly and efficiently than the British soldier. The latter, however, because of his centuries of civilization and education, is a far more intelligent being; but he must be *trained* to war with Nature as well as with a jungle enemy. Once trained, his natural aptitude for mastering a subject gives him an enormous advantage. In fighting Nature the so-called "primitive man" is much better, but in fighting an enemy under those conditions it is the capacity to absorb and apply *training* which counts.

Again, as regards night fighting, I think few will honestly claim that, as far as their mental attitude is concerned, they are impervious to certain qualms which they don't feel by day. Christianity and Mahommedanism are still very much a veneer upon those Africans who are not pagans, and superstition does bulk large in their mental feelings. But the Briton from his huddled town or open fields suffers quite considerable mental strain when thrust into the jungle for the first time. It is an unknown element, this vast and to him eerie manifestation of Nature, and again not until he has been *trained* can he divest himself of most of his fancies. I think I have said enough to show that the best armour for fighting in jungle is training and an adaptable and receptive mind.

The jungle is undoubtedly full of wild beasts, but apart from some half-dozen snakes and one small herd of pig, the 7,000 men in my brigade group saw no wild creatures beyond birds, lizards and flies. Possibly our numbers scared them off, as there was elephant spoor in plenty about, but if people would only realize that most wild creatures clear off as soon as man arrives, less nonsense would be talked on this subject also.

Lieut.-Colonel Bradford's remarks on jungle seem to be perfectly fair, though perhaps he has gone just a little too far in "debunking" it. Furthermore it is my experience that when a soldier asks "Is there bamboo there?" his expectation of a "Yes" or "No" in reply will depend upon whether he is going there to fight or to rest for some days. Bamboo is excellent for the latter purpose as its uses are legion; but there is, I feel, little doubt that fighting in ordinary jungle is a "piece of cake" compared with fighting in bamboo. We are accustomed to think of bamboo as growing in clumps, with nice open spaces in between, but in the Arakan it grows in a forest of single shafts, separated from one another by twelve inches or less, and it invariably grows on steep, razor-backed hills. To add to the difficulties of movement, dead shafts lie everywhere, on the ground and leaning against new growths at every conceivable angle. To tread on these or break them carelessly is to evoke a noise like a pistol shot. The presence of all this effectively screens a defender but allows him just that bit of visibility which militates against the attacker.

Mules are excellent, but have very definite limitations. In West African divisions, essential warlike stores such as mortars, mortar and small arms ammunition, grenades, picks and shovels and so forth are carried on the heads of soldiers, principally members of those excellent Auxiliary Groups. These men can literally go anywhere that an infantryman can, even though they wear full equipment and carry in addition a load of 40 lbs. (the normal) on their heads. However, charging engines were carried throughout the West Africans' campaigns and these weighed 85 lbs. Furthermore the human carrier eats the same food, drinks very little more water, can defend himself, and "talks the same language" as the rest of the force. Mules, on the

other hand, need much more water, eat different food and their loads have to be just-so; but their greatest disadvantage is that they do need a properly cut and graded track. This track must be wide enough for their feet and free of stumps; it must also be six feet wide at the height of a man's waist to prevent the mule's loads being fouled by bamboo, etc. It also must not be too steep, or the weight on the animal's back will cause the heavier laden ones to topple over backwards. The mule is excellent for loads beyond the capacity of man, *e.g.*, parts of light artillery weapons, etc., but for those which a man can carry, give me a human being every time when operating away from roads and recognized tracks.

Mepacrine is excellent and I confess that I do not interpret Colonel Bradford's remarks as decrying it in any way. It has no ill effects, but it does turn some people's skins and whites of the eyes yellow until its use is discontinued. It very definitely eliminates the risk of malaria to such an extent that while doctors won't guarantee that you can't get fever if you take it daily, they do say with perfect truth that your chances of getting malaria, until you stop the dose, are extremely remote.

Panjis are undoubtedly better if fire-hardened after sharpening, but no man wearing full kit (including a '08 pack and probably a shovel, let alone carrying a load on his head) can carry fifty ready-cut *panjis* on the march and be fit to fight during or at the end of it. I have yet to see the man who will successfully charge a row of newly-cut *panjis*, and such Japanese who indulged in suicide attacks against our " raw " products found them anything but " valueless."

My experiences are limited by the fact that they are confined to the Arakan and that I never came across the Burmese Patriot Force. However, to read Major Irwin's penultimate paragraph is to conclude that the Japanese are a negligible enemy in the jungle and that therefore the British, Australian, New Zealand, American, Indian and African troops who failed to destroy them until 1945, and who even suffered reverses at their hands, must be a pack of incompetent cowards. Does Major Irwin really mean to imply this?

As a result of his earlier and spectacular victories the Jap undoubtedly did get grossly overrated. He began with the twin advantages of being trained to the jungle and of having no fear whatsoever of death. As Allied training progressed, so did our superior intelligence outwit and defeat the Jap in the jungle. I will not venture to express any opinion on the quality of the Japanese Higher Command, but think that their " middle-piece " and junior leaders were stereotyped in their technique and grossly lacking in initiative. Once things did not go according to plan, or once the junior leaders were put off their stroke for any reason, the Japanese found it difficult to adapt themselves to changed circumstances. But the Japanese soldier, in defending a position from which he has been told not to withdraw, is superb. Troops of all other nations do it now and then, but nobody except the Jap has so often and so literally " fought to the last man and the last round." In other respects his weaknesses are many, but he *can* defend; and it makes no difference to his tenacity if he is supported by other arms or not. To ignore this fact in planning an attack and to fail to give supporting arms the fullest scope and time for preparation is to ask for a " bloody nose."

AIR, LAND AND SEA WARFARE

By Marshal of the Royal Air Force Sir Arthur Tedder, G.C.B.

On Wednesday, 9th January, 1946.

General Sir Hastings L. Ismay, C.H., K.C.B., D.S.O., in the Chair.

The Chairman, on introducing the Lecturer, congratulated him on the great honour recently conferred upon him. He said that the meeting was looking forward keenly to hearing Sir Arthur Tedder speak on a subject of which he had probably unique experience.

LECTURE

I MUST first explain that I agreed to give this talk before taking up my present appointment, when I was more or less a gentleman at large and had just relinquished my post as Deputy to the Supreme Commander in Europe. It is still in that capacity that I am now speaking. My views are purely my personal views and I have not even discussed them with my colleagues in the other Services, nor with the Air Staff. I offer them purely as my views for what they are worth.

When I first saw the title of this talk in print it was frankly a shock. To cover such a subject calls for a Clausewitz, a Mahan and — who shall I say; so far as I know, no one has yet written the Air Mahan. To cover this subject in forty minutes requires a Francis Bacon—I cannot hope to emulate him. The trouble is that brevity and simplicity are far more difficult to attain than anything else; perhaps because they get nearer to the real truth. However, I will do my best to indicate as briefly as possible what I believe to be some of the basic truths of this matter.

You will remember that at the end of the San Francisco Conference that great statesman, great leader, and I think one might say great prophet, Field Marshal Smuts, referred to the Peace we are now trying to build up as "Peace with Teeth." The great majority of people are tired of, bored with, war in all its aspects. There is danger in this: if the "Peace with Teeth" is to be maintained, those teeth must be sound, and if we are to be sure that the teeth are sound we must determinedly and dispassionately analyse this last war. We must dig out the underlying truths. We must find out what really happened. We won the War; but why did we win it? And how did we win it? It took us six years to win this war—a good deal longer than the previous war; was this inevitable with the political cards stacked as they were, or could we have done better? Was our National effort employed in the most economical way for the War as a whole? Equally, on the other side, why did our enemies lose? What were the weaknesses in the structure of the great German war machine which led to its final collapse?

I can scarcely begin to answer those questions here, but I want to indicate a few points which, to my mind, are of vital importance for the future. Some of them you may consider to be platitudes; that term of abuse does not concern me, for it is commonly applied to an inconvenient truth. Take two phrases I have just used—"in the most economical way" and "the war as a whole." War is the aftermath of the failure of diplomacy, but it is a continuation of policy and its object is to enforce that policy as economically as possible. I remember being taught at Staff Colleges and other places that the Object should be simple and direct, and should not be qualified; in this case I am sure that the qualification of economy is essential. By economy I mean the economy one gets from efficiency, not the false economy got by trying to do things on the cheap. I mean the economy which results from keeping

every component part of the national war machine properly balanced in relation to the rest of the machine—no passengers and no overgrown heavyweights, no Empire Building by sectional interests or Services. For modern war is total; it is a unity involving every branch of national life. A nation at war is like a boxer who has not merely to be physically fit but has to have his nerves and muscles—the right muscles—so developed and trained that by good placing and timing he gets every punch home with the maximum of power and the minimum of exertion. This may all sound rather theoretical—I do not think it is. I think it is vital that we should remember that modern war is total—that a nation at war is a fighting unity. Surprisingly enough I think it will be found that, despite all the Nazi talk about total war, one of the major mistakes they made was in failing to act up to that. During the war of 1914–18 we learnt that the cry "business as usual" was a fatal policy, yet there is plenty of evidence that in Germany, perhaps due to over-confidence, the "business as usual" policy was still being voiced and followed in some quarters more than four years after the outbreak of war, with the result that when the real pinch came in 1944 the German war machine was still not producing its full power, which alone might have postponed her ultimate strangulation.

Within the ultimate unity of a nation at war there are various components of the national effort each of which has a unity in itself: there is the war of production, which is fought in the factories; there is the war of Civil Defence, which is fought by the A.R.P., the Ambulance and Fire Services, by the man in the street; there is the war on land; there is the war at sea; and the war in the air—each of these having its own essential unity; each closely inter-related with the others to make up the ultimate unity of the national war machine. Some three years ago, I believe I caused a certain amount of consternation in some quarters because I said, in one of my rare interviews with the Press, that I believed that there was such a thing as Air warfare, distinct from Land warfare and Sea warfare. I still think that to be true and the experience of the subsequent three years has strengthened me in that belief. I think perhaps it is more universally accepted now than it was then. Nevertheless, I want to discuss this point.

As a result of hundreds of years experience and tradition, no one questions the entity, the unity, of Land warfare and Sea warfare respectively. In the old days, except for a few rare geniuses like Pitt, they used to be regarded as quite separate and apart. Even in these modern days there have been examples of this separatism. I don't believe that the Germans ever got their land and sea policies really closely knit into a proper co-ordinated whole. With regard to the air, the very idea of Air warfare as such is new—very new indeed when considered in relation to the history of war as a whole. Consider first the Germans during this war: they had a separate air Service of which they boasted much; but all the history of this war goes to show that they completely failed to understand the real meaning of Air warfare as a separate problem: they considered it merely as an accessory, a useful accessory, to Land warfare. The *Luftwaffe* of the early days was trained and equipped as an ancillary to the land armies. With overwhelming numbers and weak or negligible opposition in the air, it had an easy run in those days and many people drew false conclusions. I was often told in those days by my colleagues in the other Services how wonderful the *Luftwaffe* was, and was asked why the Royal Air Force could not do the same. The fact was that in those early days the *Luftwaffe* was able to intervene in the land battle without having to fight an air battle first. On their opponent's side the two prerequisites for success in the air were lacking—firstly,

adequate strength, and secondly, secure bases. At the end, however, of the conquest of Western Europe, the Nazis found themselves faced by Great Britain and faced for the first time by true Air warfare. Events soon proved, what experience in France had already indicated, that the *Luftwaffe* was neither equipped nor trained for real Air warfare. Fortunately the Royal Air Force, relatively small though it was, was fit for the air battle, and the Nazis lost the Battle of Britain first by day and then by night. We never lost air superiority over this country, but it was a long time before we had the means to stretch that air superiority first across the Channel and then, with the help of our American Allies and comrades, gradually across Northern France, Belgium and Holland, and finally over Germany itself.

I do not want you to think that when I speak of Air warfare I am thinking only of the fighters and their primary role in getting air superiority. The fight for air superiority, like the fight for command of sea, is a complex problem. It may be necessary in the early stages for all the component parts of an air force to concentrate on the immediate objective of air superiority. Without a reasonable degree of air superiority, no air force can effectively assist land or sea forces or strike at the enemy's war potential. To attempt to do so without a reasonable degree of air superiority is literally suicide. In the early stages of the War we were compelled to do this at times and lost some of our bravest and best in the process. In the latter stages of the War the *Luftwaffe* was driven to one or two such suicidal attempts, which contributed largely to its final collapse in the last few months of the War.

In the early days of the War, as I have said, there were some who failed to understand the nature of air superiority or to realise that it was a vital prerequisite to success in modern war, whether on land, at sea, or in the air. The course of events in the last year of the War may obscure once again this fundamental principle. When we remember the mass of shipping of all sizes that steamed to and fro with impunity across the Channel on and after " D " Day, let us also remember the days when our coastal shipping had to sneak inshore along the Channel and North Sea Coasts, and even then be subject to tip and run attacks. The difference between the two conditions is a measure of what air superiority means. In the last few months of the War the Allies had secured virtual air superiority over the whole of Germany. Allied land and sea forces were able to move and operate with the freedom which would otherwise have been impossible, with even greater freedom than the Germans had been able to operate at the outbreak of the War. The Allied Air Forces were able to devote by far the greatest part of their effort to direct and indirect support of the land operations and to the direct strangulation of the enemy's war machine. But do not let us forget that the battle for air superiority had for the time being been won. Had the War gone on longer and the enemy been able to resuscitate his *Luftwaffe*, the Allied Air Forces might have had once again to devote much of their effort to the air battle.

I think the outstanding characteristics of air power are its flexibility and the terrific concentration which proper use of that flexibility gives it. If by over-specialisation you destroy that flexibility you will not get the concentration. If your organization is such that your air power is divided up into separate packets and there is no overall unity of command at the top, once again you will lose your powers of concentration. Air power in penny packets is worse than useless. It fritters away and achieves nothing. The old fable of the strength of the bundle of faggots compared with the weakness of the individual stick is abundantly true of air power. Its strength lies in unity.

But this unity is not exclusive, any more than the other unities which go to make up the national war effort are exclusive. In particular, the operations of land, sea and air forces are closely related. The relative size of forces and the relative scale of effort of those forces will vary in different campaigns and in different stages of each campaign. But whatever those variations, the operations in the three elements are inter-dependent.

I would like for a few minutes to consider certain aspects of the Mediterranean Campaign, since I think it is in that campaign that one can see most clearly the inter-relation between Land, Sea and Air warfare. Take, for example, the time of the German attack on Crete. Immediately prior to that our armies had advanced up to Northern Greece to try and stem the German attack. Our small air force, which had been fighting throughout the Winter and had defeated the Italian air force in Albania, was moved forward behind the Army to help. They moved to fields where, for lack of engineers, there was no adequate dispersal and for lack of guns, virtually no defence. Overwhelmed by numbers in the air and defenceless on the ground, that small air force was practically obliterated and the evacuation to Crete of our Army was covered, not unsuccessfully, by a handful of remnants operating from Crete. The problem now was how to meet the impending assault on Crete itself, an assault which must come by air and/or by sea.

As regards the air, the enemy had fields in Rhodes and Scarpanto and rapidly established himself on the existing fields and made new fields in Southern Greece and on the islands. On our side, in Crete there were three very limited airstrips with practically no dispersal and no protection. Fighters based in the Western Desert were out of range since the airfields in the Cyrenaican bulge had already been lost to the Germans. Crete thus lay virtually in the centre of a semi-circle of enemy air bases: its fighter defence—about ten Gladiators and five Hurricanes, escaped from Greece, and its ground defence was little more than what could be provided by the disorganized troops evacuated from Greece.

As regards the sea, by the old standard we held command at sea. The crippling of the Italian battle fleet in Taranto by seaborne air attack in November, 1940, had been followed up and the issue clinched, only some seven weeks before the German assault on Crete, by the sea/air battle of Matapan. Our attempts to reinforce Crete by sea soon showed, however, that times had changed and as enemy air power built up round that semi-circle effective reinforcement became virtually impossible—80 per cent. of what was despatched from Egypt to Crete was turned back, 10 per cent. was lost, and only 10 per cent. arrived. To scotch the impending invasion at its source was equally impossible. A few night bombers and a few Beaufighters, newly arrived in Malta, got some good pickings at the crowded airfields in Greece, but this could have no more than a nuisance value. Incidentally, it is perhaps as well to remember that at this precise time not only had a disastrous retreat in Cyrenaica ended in a position of rather unstable equilibrium near the Egyptian frontier, mainly because Rommel had outrun his supplies, but also Iraq was in flames and our main base at Habbania besieged, and German aircraft were attempting to establish themselves there and in Syria.

When the invasion came it followed the logical pattern. First, heavy air attack on the three little airfields until it was clear that further use of them was impossible, and the six remaining fighters were withdrawn the day before the actual invasion began. From that time no defence in the air was possible except a few very gallant suicide missions from the Western Desert. Then came the air invasion, by glider,

parachute and direct landing on beaches, etc., then two attempts to follow up by sea, met by the Royal Navy. The first attempt, by night, was successfully broken up and turned back by our surface craft. The second attempt in daylight was met very gallantly by the Fleet and turned back but the cost was very heavy—two cruisers, four destroyers lost and two battleships damaged. No enemy surface fighting ships were engaged. The air invasion, after eight days, succeeded at a very heavy cost, partly owing to the fact that the enemy were not quite as efficient at the business as they were credited with being, but mostly owing to a very gallant defence by the ill-equipped defenders. For the evacuation of Crete, which took four days and nights, it was possible by good co-operation and careful planning to give fighter cover some 250 miles from the Western Desert bases, and it was successful with relatively small losses.

We had been taught a lesson, brutally and unmistakably. The first round in modern war takes place in the air—the fight for air superiority; and to be successful one must have reasonable strength in quantity as well as quality, and one's air bases must have security—the security given by warning systems, by dispersal, by protection, and by guns. In Greece and Crete we had none of those things. To be frank, our military effort in those days in the Middle East was out of balance. And we must be frank in analyzing the past, not in the sense of criticising or assigning blame—that leads nowhere—but in the sense of learning from our mistakes. The lesson is clear. It was no use having a victorious and predominant surface fleet if it was not free to operate because we had lost control in the air; it was no use having a strong army if, for the same reason, it could not be supplied and maintained.

The lesson was learnt but it took time to apply the remedies. To build up our air strength was a tedious business, complicated as it was by having to send a great part of our forces to India and the Far East. Nearly all our aircraft came by sea to the West Coast of Africa, there be assembled and thence flown across Central Africa and down the Nile Valley to Egypt. Our army equipment had to come round by the Cape. Gradually, however, the balance was rectified. Amongst the Commanders, appreciation of the balance of power of the relative responsibilities of the three arms towards each other, became clear. I remember that in our discussions my naval colleague was as insistent as I was in emphasising to our army colleague the urgency of the recapture of the airfields in the Benghazi bulge, without which convoys could not get through to save Malta from starvation. Equally my army colleague put the capture of airfields or of areas suitable for airfields as a primary consideration in the planning of his land operations. The land-war in the Mediterranean became, in fact, a battle for airfields. When we lost airfields we lost the initiative on land and at sea. When we lost Crete, Derna and Tobruk, Malta was cut off by sea from Alexandria. When Habbania was besieged, we nearly lost Iraq. When Malta—that gallant air base—was brought almost to its knees, we nearly lost all hope of regaining our position in the Mediterranean; for I do not see how we could have assaulted Sicily without strong air forces operating from Malta. On the other side of the picture, if you study the campaign along the Coast of Africa and across the Mediterranean to Europe you will see how the advance went, step by step, from one airfield area on to the next: Daba, Gambut (East of Tobruk), Gazala and Derna, Benghazi, Ageila, Sirte, Misurata, Gabes, Tunis, Pantellaria, S.E. Sicily. A good example of the relationship between Land, Air, and Sea can be seen in the break through from El Alamein: on the 13th November, 1942, the Eighth Army re-entered Tobruk; on the 14th, fighter squadrons were operating from Gambut, just East of Tobruk; on the 16th, the first convoy sailed from

Alexandria for Malta; on the 17th, squadrons were operating from Gazala (halfway from Tobruk to Derna); and on the 19th from the Martuba fields in the Cyrenaican bulge. The convoy got through, and from that time on, the route from Egypt to Malta was open. Each of us—Land, Sea, and Air Commanders—had our own special war to fight, each of us had his own separate problems; but those separate problems were closely interlocked, and each of us had responsibilities one to the other. Given mutual understanding of that, you get mutual faith; and only with mutual faith will you get the three arms working together as one great war machine. I am sure that is true, whatever system of command you adopt—three independent Commanders-in-Chief or one Supreme Commander.

This matter of mutual understanding and mutual faith is particularly important as regards the Air Force. As I have shown in these one or two examples, the Air war is of vital importance to the operations at sea and on land. It is natural, and indeed, essential, that Sea and Land Commanders should take a very real interest in what the air forces are doing—just as the Air Commander must know exactly what is happening on land and at sea. Plans should, in fact, be joint—a Land/Sea/Air Plan. But if there is distrust there will be a tendency for Land and Sea Commanders to want their own little bits of air force. I remember in the early days instances of Division and Corps Commanders demanding their own allocation of fighter squadrons: the old story of the choice between single faggots or the bundle of faggots. Fortunately, in the Mediterranean theatre we had the bundle, and I am sure that was one of the secrets of success: the air effort concentrated to meet the problem of the moment. During the El Alamein campaign, when the crucial matter was the relative rate and volume of supply (ours round Africa, and the enemy's across the Mediterranean), our whole air effort was concentrated against the enemy columns and supplies—bombers day and night against the shipping and ports of Benghazi and Tobruk; strikes from Egypt and from Malta against shipping coming across from Europe culminating in the sinking of Rommel's last precious tanker before his eyes outside Tobruk on the third day of the battle of El Alamien; Coastal Beaufighters destroying trains and transport far behind and beyond the reach of the ordinary fighters; torpedo Swordfish loaded to the limit with flares instead of torpedoes wallowing over the desert throughout the hours of darkness, looking for targets, and then calling up the waiting Wellingtons to deal with them; bombers attacking airfields and fighters covering barges and coasting vessels so that the seaborne supplies should keep pace with the army in advance. Speaking of the retreat, Mr. Churchill said, "what saved us was superior air power." Throughout the advance the same superiority was a vital factor in conjunction with the Navy in strangling German power in North Africa. In these early days, numerically we were not superior, but we got our superiority by concentration: superiority achieved by concentration made possible only by unity.

The question of unity arose afresh in an urgent form when the Allied landings took place in North Africa. The most immediate problem was the air. The moment the landings took place the enemy communications from Europe to Tunisia became the vital key to the whole issue, for once again it was a race for reinforcements and supply. Immediately the landings took place the Middle East air forces took up the sponge to help General Eisenhower's campaign. Malta was reinforced. Tunis, Biserta, Palermo, and Catania, and the shipping passing between them, became the targets of our aircraft. Under General Eisenhower there were two other air forces, one British and one American, with a tendency for the latter to be further split. Here was the very negation of concentration. The army problem

was not quite so urgent, there was an Allied Army in the West and a British Army in the East, working towards the same object, but still geographically some way apart. The issue, however, was clear—the bundle or the separate faggots; and it was decided at Casablanca. The air and land forces were unified, each under a single commander. And here I would like to express my very sincere admiration for the splendid loyalty with which our American friends, particularly the airmen with whom, of course, I had special dealings, accepted integration with us and accepted British commanders. Real unity of command of air forces is just as vital with Allied forces as with National forces, but in asking for it you are asking for a lot.

This brings me to one final point on the subject of unity—the three unities of Land, Sea, and Air combined into the one unity of an efficient fighting machine. I have mentioned the need for mutual understanding and mutual faith. This, in the ultimate, comes down to personalities. One thing I have learnt in this late war is that the personality of the few men at the top—commanders and staff, matters far more than I ever conceived. We all owe far more than will, I expect, ever be recognised to the personality of General Eisenhower and to his ability to build and maintain a real team—and, if I may say so, a team including a certain number of prima donnas. I am absolutely convinced that for modern war, with all its inter-relationships, you must have commanders and staffs who fit together, who will work together. I am sure you have to be ruthless in this matter. Give them time—time for strong characters to adjust themselves to each other, but if, after giving a fair chance for the initial sparks to die down, sparks still fly—be ruthless—sack the non-co-operator.

At the beginning of this talk I mentioned the importance of economy. The unities of which I have spoken themselves effect economy in so far as they make practicable the concentration at the vital point by which a unified force can defeat a numerically stronger force which lacks unity. But I think the principle of economy must apply to every aspect of war. As I said, by economy I do not mean doing things on the cheap; I mean getting the maximum of effect with the minimum of effort. Above all, in these days of total war, no nation can afford to waste man-power or material. Just as we cannot afford uneconomical methods in production, so also we cannot afford uneconomical methods in actual warfare.

I feel there are two things we must do. Firstly, we must analyse the events of this last war dispassionately but ruthlessly without any bias. We must analyse our own and our allies' operations on land, at sea, and in the air, and still more important, we must consider our military effort as a whole. Were our forces properly balanced? Was our national effort properly distributed? Then we must do the same as regards the enemy's military effort. He certainly went wrong, but what were his mistakes? Was his failure due entirely to political misjudgments or were there weaknesses in his military machine? I cannot answer these questions here. Much thorough and judicial work is needed to find the answers. But found those answers must be; otherwise the teeth we maintain to keep the peace will be unsound. We shall be open to the old charge of preparing to win the last war but one.

I have said I cannot answer these questions, but I would like to put one or two contrasts to you. In 1940, when the German war machine was at the very peak of its power and success, it was unable to prevent the evacuation from Dunkirk, under its very nose, of the great bulk of our forces. In 1943, from Tunis, there was no "Dunkirk"—virtually nothing escaped from North Africa. Again, in 1940,

at the height of their power the Germans could not face the invasion of England, though the defenders on land were armed mainly with shot guns and pikes. Yet, in 1944, after the enemy had had literally years of warning and months of intensive preparation, the Allies were able to bring great forces across nearly a hundred miles of water and force the much-vaunted West Wall with losses which were almost incredibly small in view of the undertaking.

Consider yet another contrast—the casualties in the land forces during the eleven months from " D " day to the fall of Berlin, and the casualties in the war of 1914-18. The total British and Dominion Army casualties in Western Europe from " D" day to 8th May, 1945, were 189,000 ; during the first month of the Somme, 1916, 196,000. Compare also the casualties on the East and Western fronts during this last war. One gathers that on the Eastern front casualties on both sides were comparable only with those of the war of 1914-18. There must be some underlying reason explaining such vivid contrasts. My personal view is that one explanation, and probably the main explanation, will be found in the use of air power : the use of air power, first to secure air superiority and so secure the initiative and freedom of movement for all forces—Land, Sea, and Air, then, in addition to giving immediate support to land operations, strangling the very life out of the enemy's war machine by striking at his vital industries and destroying the communications by rail, road, and water, by which his war industries and his armed forces are nourished. These operations are interdependent, but they are concurrent. Do not let us forget that before " D "day arrived over a million men in Germany were virtually immobilized manning the air defences of the Reich.

But though I do believe that in the use of air power lies the main explanation for the remarkably low rate of casualties in the North African and European Campaigns, I see no reason for complacency. Could we not have done better still ? We still have to answer the quips of our elders and betters who taunt us with taking six years to win this war. It was over three years after the outbreak of war before we even began to recover the initiative. Was this long gap entirely due to our relative weakness and unpreparedness compared with the Germans, or was it in any way due to our war machine and war effort being out of balanace ?

So much for the past. Our second task is, with the lessons of the past in our mind, to face up to the future—not an easy thing to do. Fantastic crystal gazing will get us no further than will rigid conservatism—both would be fatal. We must start from the firm basis that ruthless analysis of this last war will give us and we must discard equally ruthlessly ideas, traditions and methods which have not stood the test of economy, and then we must look right ahead. I myself believe that the keywords for the future are flexibility and speed. I feel that the days of the leviathan are over so far as warfare is concerned, whether on land, at sea, or in the air. I think the future lies with David, not Goliath. I doubt if any nation can afford another Goliath type of war—I'm sure we cannot ; and even if it could, I believe the David would win. In any case, no peace-loving democracy will tolerate maintaining a Goliath in peace time, and I am sure that in another war we would not be allowed the three years grace we had to build up our Goliath this time. No, in my opinion, each Service must clear out old shibboleths and outworn traditions, go to the scientists and technicians for all they can possibly give in the way of speed, mobility and economy, develop the whole time with an eye on the other two members of the team in co-operation and not in competition. Couple this with the mutual

frankness and mutual faith which gave success in the War, and then we shall get what we need—a united, efficient and economical armed force, not an embryo Goliath which would take years to come to maturity, but a fully-grown David, fighting fit, ready to act swiftly and decisively as one of the World's policemen. To return to Field Marshal Smuts' metaphor, our teeth will then be sound and ready to bite instantly and decisively.

DISCUSSION

AIR CHIEF MARSHAL SIR GUY GARROD: I would like to refer to another example of the close interplay of sea, land and air, namely, the capture of Rangoon in the Spring of 1945.

The problem then was to get General Slim's armoured force down to Rangoon. The roads from Eastern India into Burma would not permit of that force being supplied by land; therefore it had to be supplied by air. The amount of supplies which could be delivered depended on how far forward the bases for air supplies could be thrust. It was the Navy's job to see that the Army established itself on the island down the West coast of Burma—Ramree, South of Akyab, so that air bases could be located from which supplies could be flown to the discharging point South of Mandalay. When that had been decided the first calculation to make was the amount of supplies that could be delivered by air at the point South of Mandalay. That enabled the Army to decide what size of force could thrust down to Rangoon. That force was supplied from those bases by road, which enabled the Air Force to concentrate on the impassable gap from Ramree to South of Mandalay.

As General Slim's armoured column approached Rangoon the Navy carried a force of men up the Rangoon River and there was an amphibious landing South of Rangoon. Thus Rangoon was attacked by land from the North and South, and at the same time an air-borne force was dropped on to it. The result was a very successful operation.

It was a risky operation, and after Rangoon was captured there was a great deal of clearing up to be done to the northward of Rangoon between it and Mandalay.

AIR VICE-MARSHAL P. H. MACKWORTH: In the future we will have to think about how we are going to keep this integration of the Services going. At the present time it is very evident at home that we are losing some of the close contact we had during the War. That is inevitable while going through the doldrums: everybody is busy reorganizing and cutting down. In the future we ought to have some form of organization which will compel the commands of the various Services to get together, discuss their problems and carry out combined exercises which have some meaning to them all. I do not think that is a thing which normally commanders themselves are able to do. There will have to be some form of enlarged Combined Operations to run practical exercises.

CAPTAIN E. ALTHAM, R.N.: The Lecturer referred to the smaller number of casualties in this war. I know that is quite true for the Army; but in the Discussion after the last lecture we had in this theatre Admiral Sir Charles Little pointed out that the Navy had suffered far more casualties in this war than in the 1914–18 war. Of course, the conditions were different: the power of the submarine increased far beyond what it was in the 1914–18 war; in addition, the air menace to shipping presented a new and very serious task for the Navy to meet, which it could not possibly have done without the ever-increasing co-operation of the Royal Air Force.

We have been very fortunate in having had on this platform in quick succession three Chiefs of Staff. Both the other Chiefs of Staff, from the Chair, remarked on the value of this Institution for preserving the very thing the Lecturer to-day has emphasized—the close relationship of the three Services. At the instigation of the Chairman of our Council, we are taking steps to bring the Institution into much closer touch with serving officers, so that it will be the medium for promoting closer contact

between the Services, unofficially but in that spirit of comradeship which was developed so greatly during the War, and in the interests of which we hope to play our part in time of peace.

LIEUTENANT-COMMANDER T. E. BARLOW, R.N.: In connection with what Captain Altham has just said, I think it would be of very great importance to allow the junior officers of the three Services to see how the other branches work, far more than has been the case between the wars. Officers of the rank of Lieutenant in the Navy, Captain in the Army and Flight-Lieutenant in the Royal Air Force might go for a period of, say, six months to other Services to see exactly what goes on. It should help to bring about greater understanding.

THE LECTURER: As regards naval casualties, I myself gave a most horrible example of what happens when things are out of balance. For the Navy to try to operate in the middle of a semi-circle of air fields was suicidal—like some of the air jobs at that time—because our forces were out of balance.

THE CHAIRMAN

I have heard discussions on the necessity for inter-Service co-operation for a very large number of years, but I do not think I have ever heard the case for it put so simply or illustrated so vividly as has been done by Sir Arthur Tedder this afternoon. It is quite clear that no commander of the future will be worthy of either his name or his job unless he has a deep knowledge of the work of the two Services other than his own.

In regard to what Air Vice-Marshal Mackworth and Lieutenant-Commander Barlow said, I am quite sure that the Chiefs of Staff—of whom we have one here—will see to it that co-operation between the three Services is one of the fundamental principles governing the future education of officers of all three Services almost from their earliest days.

I hope nobody will misinterpret Sir Arthur Tedder's allusion to David and Goliath as meaning that if, in spite of the United Nations Organization (which met in London for the first time to-day), there should be a war, it will be fought out by gladiators on either side, whether heavyweight or lightweight. He certainly did not mean that. On the contrary, he emphasized throughout his talk that modern war is total war and that the fighting Services are only the cutting edge of a war machine which embraces every department of State, and all the national energies which those departments control or direct.

Sir Arthur Tedder is a very busy man. He is in the process of taking over that terrific job, Chief of the Air Staff. Therefore we ought to express our gratitude to him all the more heartily for having spared the time to come here to-day, and for having given such an illuminating exposition on a subject of which he is so clearly master.

A vote of thanks to the Lecturer was then put and carried with acclamation.

AIR CHIEF MARSHAL SIR ROBERT BROOKE-POPHAM (Chairman of the Council), proposing a vote of thanks to the Chairman—General Sir Hastings L. Ismay, said that when the history of the War came to be written it would be seen what a tremendous amount of co-operation on the planning side was due to General Ismay, and not least due to his personality and sense of humour.

A vote of thanks to the Chairman was put and carried with acclamation.

JOINT PLANNING STAFFS

By Lieut-Colonel G. P. D. Blacker, C.B.E., R.A.

THE appointment of Supreme Commanders, with staffs drawn from all three Services, was one of the innovations of the late war. These staffs included fully integrated Joint Planning Staffs, who undoubtedly gained considerable experience both of inter-Service working and of inter-Service planning. Unfortunately, inter-Service co-operation is easier round the dinner than round the planning table. In the latter case, a system of working has to be learnt and certain difficulties overcome. The object of this article is to give some personal views, based it must be admitted on limited experience, on what some of these difficulties are, and on some of the points to watch if we are to be able quickly to form such Staffs in the future.

First let us deal with a few general considerations and then with the broad functions and organization of a Joint Planning Staff. In any inter-Service staff there are difficulties to be overcome because of the different staff methods. The Royal Navy and the Army are poles apart in what they require their staffs to do. In consequence, their whole organization, division of duties and method of working are totally dissimilar. Furthermore, commanders in the different Services handle their staffs and expect them to function in different ways. Thus, before we can expect a fully integrated headquarters to function smoothly, we have to evolve and teach an inter-Service staff organization and method of working, so that an inter-Service headquarters will work, however often the colour of the commander's and senior staff officer's uniforms are changed. Perhaps this organization could be adapted from the R.A.F., whose system is somewhere between the extremes of the other two Services.

To descend almost to the ridiculous: the three Services use a different language. The Royal Navy do not use " will " in their equivalent to the Intention paragraph; while a signal, or even a letter, which to the soldier is a masterpiece of succinct clarity, may well strike the sailor, and possibly the airman, as a singularly rude and offensive document. This may not be of vast import, but we might as well, during the years of peace ahead, evolve a common language. Really detailed knowledge of another Service may never be possible; for example, no convoy is ever big enough to carry everything that the interested parties declare at the first shot to be essential. While a soldier can decide the relative disadvantages of omitting, say, a field regiment or a G.T. company, it is doubtful if any one man can ever decide a detail such as this when two weird units of different Services are involved. The only solution is, therefore, *honesty*. All three Services must be honest and avoid conscious over-insurance or undisclosed assets. Thus, while one can doubt one's opposite number's judgment, it is fatal if one doubts his sincerity.

Then there is the attitude of mind in which inter-Service work is approached. Too much attention to the dignity as opposed to the requirements of one's own Service—for example, a heated and lengthy battle over whether the Air is " in support " or " co-operating "—will only produce friction and waste time and energy. In this connection all three Services are equally liable to guilt. The Army is by nature the rudest of the three and is in consequence apt to offend the others unintentionally; while the sailor and the airman are, perhaps, a little

quick to take umbrage and to fail to realize that as a general rule the soldier has by far the most difficult row to hoe.

To pass to the functions of a Joint Planning Staff; broadly they are three: work in connection with planning; the mounting of an operation; and a variety of miscellaneous duties of an inter-Service nature, varying from preparing draft replies to higher authority to minor parochial matters.

To deal with planning: the fundamental principle is that the only people who can make a plan are those who have to carry it out. Before Joint Commanders can plan, however, they must be told, in addition to all available information, three things; first, what they are to do—the Object; secondly, what they are to be given to do it with—the Resources of all natures from bath units to bombers and from sappers to ships, both under command and in support; thirdly, the Time, *i.e.*, the earliest D-day (although they will of course choose the actual day from tactical considerations, such as moon and tide conditions; the earliest the operation can be teed up is outside their control).

Before the Supreme Commander can decide these things and issue them to the Force Commanders in a Directive he must know and decide on various preliminary steps. First, he must decide how he will carry out his next task—for example, directly or via some intermediate objective. He must then decide what resources he can allot. To do this he must know the cost to other operations in his theatre of allotting these resources; for example, can those operations still be maintained with so many less ships or transport aircraft? Lastly, the time factor; this will be considered later in this article.

Now these facts can only be collected and submitted for his consideration by the united efforts of every single branch of his staff. The J.P.S. normally do this, but they do not supplant or short-circuit the rest of the staff; they draw on the latter's knowledge and advice to prepare co-ordinated recommendations for decision. In order to arrive at the answer to all these problems, however, a fairly detailed plan must be made, as it is upon detail such as the comparative rates of build up that decisions have to be made. This plan is only passed on to the Force Commanders and their staffs as a guide to them on how the Supreme Commander arrived at his decisions.

Once an amphibious operation is decided upon there are broadly two interested parties. There are the Force Commanders who make the plan, and the Mounting authorities—usually the Commanders of the Base from which the expedition is launched. These Mounting authorities have to prepare the force, move men, vehicles and stores to ports; waterproof vehicles; collect and, where necessary, fit ships; and, finally, load the ships so that everything emerges at the far end exactly as planned by the Force Commanders. There is, therefore, the need for the very closest co-operation between the Force and the Mounting authorities. It has been found that a vast number of problems which arise affect all three Services and a number of branches of their staffs. It is, therefore, a help to all concerned if there is an inter-Service organization available to co-ordinate when required and generally to assist Force staffs. This is a role which can be done by the J.P.S. Their job should not, however, either prevent direct contact between Force staffs and their opposite numbers in the staffs of the Mounting authorities, or include any inter-Service matters which are a purely Force matter. One of their jobs is usually to draw up on behalf of those concerned a planning time-table. The Mounting authorities have to base all their work on the force plan and they

must have the information they need in time to act. Thus, it is essential to have a timetable giving the dates on which the Force must produce the necessary data; the latter vary from the detailed breakdown of stores to convoys to the allocation of units to ships. Thus during the mounting of an operation the role of the J.P.S. is not that of either interfering or snooping on Force planning, but of assisting to achieve the necessary close liaison between the Force and the Mounting authorities.

Then to deal with how the J.P.S. is to fit into the general chain of command. It is considered doubtful if we shall ever achieve such a degree of inter-Service training that a Supreme Commander can command all three Services direct with equal facility. At present, at any rate, a Supreme Commander must rely ultimately on the advice of his Commanders-in-Chief on one-Service matters. Thus the close proximity of three equal C's-in-C. with their staffs is, it is suggested, an essential part of the Supreme Command set-up. (The organization where the Supreme Commander also commands his own Service direct is not considered, as with this system the whole organization has to be altered every time the Supreme Commander is relieved by one of another Service.) A Supreme Commander has, therefore, to turn ultimately, not to his own staff, but to his C's-in-C. Furthermore, the J.P.S. when considering a problem will, in numerous cases, only be able to get the advice they need from the staffs of the C's-in-C. It is, therefore, essential that the J.P.S. at Supreme H.Q. should be able to keep in close day-to-day touch with the staffs of the C's-in-C.

A further consideration is the division of responsibility between Supreme H.Q. and those of C's-in-C., and the degree to which inter-Service co-ordination is centralized at Supreme H.Q. Although this will vary to some extent according to the requirements of individual Supreme Commanders, it is generally true to say that Supreme H.Q. will be engaged more with future planning, while the C's-in-C's staffs will be more concerned with current operations. There will, however, always be the need for considerable inter-Service co-ordination both at Supreme H.Q. and between C's-in-C's staffs.

There appear to be two ways of fitting the J.P.S. into the set-up. First, the J.P.S. can be part of the Supreme Commander's staff and solely responsible to him. Alternatively they can be individually part of the staff of their own C.-in-C., individually responsible to him and collectively responsible to the Supreme Commander.

The biblical authority which asserts that " No man can serve two masters " provides the chief argument for the first system. In addition, it simplifies a clear cut division between the responsibilites of the headquarters concerned. On the other hand, it divorces the J.P.S. from the C's-in-C's staffs and tends to turn them into a private team without real backing or responsibility for their views. Further, it divorces the C's-in-C's staffs from responsibility for matters which are under examination at Supreme H.Q. but which have not yet been passed to C's-in-C. As C's.-in-C have to be aware of all matters under consideration by the Supreme Commander, the earlier their staffs are brought into the picture the better. The second method has the advantage that the C's-in-C. have closer control over the J.P.S. and can inculcate their views from the start. The J.P.S. by virtue of the fact that they are members of their own C.-in-C's staff can more easily get the help and authoritative views of that staff. The J.P.S., however, have to weld together the views of the three C's-in-C. and produce what they consider to be the best

inter-Service answer. This may well bear about as much relation to the views of any one C.-in-C. as the average film does to the book on which it is based. The final answer has, therefore, to be just as carefully considered by the C's-in-C. as one produced under the other method. Furthermore, the J.P.S. often have a harder task in reaching agreement amongst themselves if they have been given high level views on the matter under discussion in advance, as they will naturally be more inclined to take than to give under these conditions.

Whichever system is adopted, it is considered that there must not be two planning staffs—one at Supreme H.Q. level and the other at C's-in-C's level, at work on the same problem. Quite apart from the fact that, human nature being what it is, they are more likely to pull in opposite directions than together, accurate planning can only be done if there is full and unrestricted access to all branches of both the Supreme and C's-in-C's staffs. This will be easier to achieve if the planners are individually members of their own C.-in-C's staff than if there are two planning teams at work.

A final consideration is the amount to which the Supreme Commander decides to centralize inter-Service co-ordination at his own headquarters. His own Planning Staff will almost certainly be used for this and, therefore, the greater the centralization the greater the arguments in favour of that staff being individually responsible to C's-in-C's.

In conclusion it seems worth while to mention the factors affecting the question as to whom the J.P.S. should normally report—direct to the Supreme Commander (and, of course, to C's-in-C.) or to some intermediate link, such as the Chief Staff Officers of Supreme H.Q. and of C's-in-C. The normal staff procedure is, of course, for everything that is to be submitted to a Commander to go through his Chief Staff Officer. To adhere to this the J.P.S. should report to an inter-Service Committee of the Chief Staff Officers of the Supreme Commander and C's-in-C., who then submit their recommendations to the Commander. It is, of course, essential, that any agreed inter-Service study is only amended by some other inter-Service body. On the other hand, the J.P.S. at Supreme H.Q. is collectively responsible to the Supreme Commander, and it is probable that there will be no higher level inter-Service body concerned with planning in the H.Q. In addition, time is often an over-riding factor and it is obviously quicker for J.P.S. papers to go direct to the Supreme Commander. Furthermore, the final answer, irrespective of at how high a level the final draft is produced, can only be arrived at by the Supreme Commander with his C's-in-C. If the J.P.S. keep in really close touch with all the Chief Staff Officers concerned throughout their work, the final answer they produce should be in line with, or at least acceptable to, those officers.

The London Joint Planning Staff should be a sound guide to procedure. Here the Directors of Plans are individually members of their own Service Ministries but are not directly under their respective Chiefs of Staff. Nevertheless, collectively they report direct to the Chiefs of Staff. Each Chief of Staff is, of course, briefed by his own Service Staff.

It is not considered possible to express a definite opinion on which is the better system of organizing a J.P.S. or to whom they should normally report. The answer must depend on how the Supreme Commander decides to adjust the relationship between his own and his C's-in-C's headquarters. It is, however, essential that the system adopted be fully understood and adhered to by all concerned.

THE COMPOSITION AND DESIGN OF OUR POST-WAR FLEET

By Lieutenant D. TRIMINGHAM, R.N.V.R.

WHATEVER agreements may be reached for international security in the post-war period, it will probably not be denied that, so long as sea power in any form constitutes an effective means of waging war, a strong British Navy must remain as an essential factor both for the implementation of such agreements and the maintenance of our own security and prestige. At the present time, British naval strength is a poor second to that of the United States whose newly-won position as the premier naval Power in the world no other nation is likely to dispute within the foreseeable future. This decline from our pre-war position can, however, be ignored in so far as any threat to our security is concerned, while, on the other hand, our naval superiority over the next strongest Power is materially greater than at any period in modern history.

COMPOSITION

Although we might have the assistance of the American Navy in any future major war, it would be incompatible with sound principles of Imperial Defence and with our national prestige openly to rely on any foreign Power, however friendly, when formulating our future building programme. This, it is suggested, should be framed on the basis of maintaining a naval strength adequate to deal single-handed with any two Powers, other than the United States. In calculating this strength it would be by no means sufficient to have a Navy solely for the defence of our sea communications. We should be able to hit our enemies, and hit them hard and often, *immediately on the outbreak of hostilities*, if only for the reason that the knowledge that we were in a position to do so would be a strong deterrent to an aggressor contemplating war.

Nevertheless the importance of being able to protect our sea communications *from the outset of hostilities*, cannot be too strongly stressed, for it must always be borne in mind that any nation well situated geographically might seriously threaten or completely cut our trade routes by the use in sufficient numbers of submarines and aircraft alone, unless we possess effective means of countering such attacks. The experience of two major wars has shown that if these means are not maintained in time of peace, it is not possible to provide them in time to prevent crippling losses of shipping once a war has broken out. It is very doubtful whether, unaided by the United States, we could have produced during either of those wars the escorts and other measures necessary to defeat the German attacks on our shipping before our losses had reached a state which would have rendered it impossible for us to carry on the struggle.

On the basis of recent war experience we should maintain a Navy which will provide :—

(*a*) Highly mobile " task forces " of capital ships, carriers and destroyers strategically based to strike without delay at any potential aggressor.

(*b*) Substantial numbers of small carriers and escort vessels for trade protection.

(*c*) Submarines for attacking enemy shipping and for long-range reconnaissance.

(*d*) A moderate number of cruisers for countering isolated raiders and for miscellaneous duties connected with (*b*) and (*c*).

(*e*) Monitors and landing craft of all types for amphibious operations.

These functions of the various warship types enumerated above are stated in the broadest terms, and it is scarcely necessary to remark that no type would be rigidly allocated to those specific duties although they might be regarded as representative of their primary employment.

The number of ships in the various categories required to fulfil the above conditions would necessarily depend mainly on the post-war building programmes of other Powers and need not be dealt with here, but the question of their *design* is of especial interest and it is proposed to discuss briefly some aspects of this in so far as that can be done without being in possession of full data derived from 1939–45 experience. The subject is all the more important in view of the fact that some of our recent designs do not appear to have proved entirely satisfactory.

Design

From about 1925 onwards, British design, even admitting the handicap of Treaty restrictions, seems to have suffered from indecision reminiscent of that which prevailed in the period immediately following the introduction of steam in 1860 and which lasted until the Naval Defence Act Programme of 1888. The result was that, even after the outbreak of the late war, the Navy was receiving ships which were, in some cases, distinctly inferior to the contemporary types of foreign Powers. For example, the adoption of the 14 in. gun in the " King George " class, introduced a third heavy gun calibre into the fleet, and the subsequent reversion to the 16-in. in the " Lions " appears to indicate that the main armament of the former was not ideal. Colour is lent to these suspicions by the fact that, when it came to the test, the " Prince of Wales " was unable materially to damage the " Bismarck," while the " Duke of York " apparently proved incapable of closing the nominally slower " Scharnhorst " until the latter's speed had been reduced by a torpedo hit.

The retention of the capital ship, in any form, appears likely to constitute one of the most controversial naval problems arising out of the recent war. Space will not permit a full discussion of this subject here, but the writer puts forward his own conclusion that, provided she is given adequate A.A. armament and aerial cover, the capital ship can still carry out certain important operations more efficiently than carrier-borne aircraft and must have a place in our post-war fleet although no longer playing her former predominating role.

In so far as design is concerned, war experience does not appear to call for any drastic changes in the type as exemplified by the most modern units now in service. Given offensive power, speed, and protection equal to that of any foreign contemporaries, the principal features to which consideration should be given in any future design would seem to include :—

(1) Provision of a powerful, numerous and well-sited A.A. armament with a good ammunition supply.

(2) Maximum degree of internal sub-division both above and below waterline with a view to " localising " damage as far as possible. Penetration below decks, in the event of a direct hit by a heavy calibre projectile, is probably inevitable as no thickness of armour which it is practicable to fit (especially horizontally) will suffice to resist this. Similarly, outer hull plating, below the waterline, is almost certain to be ruptured by even a near miss from a large

bomb, but restriction of the flooded area to a few compartments would involve a correspondingly slight loss in fighting efficiency.

(3) Curtailment of superstructure to a minimum in order to reduce target, increase field of fire for the A.A. guns and lessen the extent of superficial fires which, although not necessarily endangering the ship's safety, can materially affect her fighting efficiency.

The policy of building greater numbers of smaller ships, which from time to time is advocated in some quarters, is open to serious criticism on the grounds that, to be fully effective, a " two to one " numerical superiority over the larger type is probably required and it is doubtful whether a displacement of, say, 20,000 tons would be adequate to carry the minimum acceptable degree of offensive power, speed and protection.

Carrier design calls for little comment except, perhaps, to remark that a standard small carrier design might well be developed from the escort types produced during the War and which must necessarily have been largely " experimental " in character.

Cruiser construction in the British Navy during the past fifteen years has been characterised by a remarkable medley of types, some of which it would seem difficult to justify. It appears that, in view of the great development of the aircraft carrier, the time has now come for a review of the cruiser's functions with the object of arriving at a standardized type suitable for all normal requirements. As in the case of the capital ship, heavy A.A. armament, maximum internal subdivision and reduction of superstructure are important points.

Destroyer design, within the same period, has, on the other hand, shown a refreshing stability and continuity of purpose, and the fine war performance of our destroyers is a sufficient indication of their excellent all-round qualities.

At no time in modern history has the British Navy possessed such a multitude of " escort " types as were in service at the end of the War. While this variety may have been to some extent unavoidable during the war period, it has obvious disadvantages from both constructional and operational standpoints, and it would seem very desirable that the experience gained with these different types should be utilised in the production of a single, or at the most two, standard " escort " designs on which future construction could be based. Taken all round, the excellent " Hunt " class destroyers would appear to be the most satisfactory and, in the long run, economical type from which to work, as, although they may be unnecessarily large and costly for certain duties, this would be more than offset by their proven adaptability for a very wide range of operations. The probable advent of very high speed submarines would, in any case, seem to rule out the slower escort types for future anti-submarine work.

It will probably be admitted that, by the end of the War, the Germans had developed submarine design, in so far as purely military qualities are concerned, to a higher degree than any other Power, and it is to be hoped that our designers will make the most of the opportunity, now afforded them, to incorporate some of the best enemy ideas in our own future construction. The most important of these seem likely to be found in the matter of propulsion : some of the latest U-boats are reported to have been capable (with Diesel drive) of 30 knots on the surface and well over 15 knots submerged. These figures, if anywhere near correct, eliminate one of the principal and hitherto unsurmounted disadvantages of the submarine and obviously open up entirely new possibilities for its effective employment as well as creating new and difficult anti-submarine problems.

It is, as yet, too early to attempt any accurate forecast as to what effect the introduction of atomic warfare is likely to have on warship design, but this may well be considerably less than appears to be supposed in some quarters, at least in so far as any drastic changes in types are concerned. At any rate, we have it on Ministerial authority that warships and naval aircraft will continue to be required in the future whether or not they use atomic instead of high explosive projectiles.

For obvious reasons, the termination of a long war in which sea and air power have played a prominent and closely related part must bring about a critical period in naval design, and the present may well prove to be the most critical in the history of the British Navy, especially as the financial state of the country demands that the utmost value should be derived from every penny spent on its armed forces. On at least two occasions in comparatively recent history it has been considered advisable to appoint special committees to consider future warship designs, and it is suggested that this procedure should now be repeated and the whole question exhaustively reviewed in the light of war experience by a committee, comprising, not only members of the Constructor's Department, but also senior and junior Flag Officers, including those with experience of the Naval Air Branch, assisted by civilian scientists and experts whose opinions might be of special value.

THE ROLE OF THE ROYAL AIR FORCE IN THE PRESERVATION OF PEACE

By Group Captain G. G. Barrett, C.B.E., R.A.F.

WITH the greatest of all wars at an end, we turn naturally to the preservation of the peace for which we have worked and fought and for which so many have died. The War led us to build military forces of great size and strength. They have won the victory for which they were designed and it now rests with us to decide how we can best use them to keep the peace they earned.

Any discussion of the maintenance of peace inevitably leads to abstract academic arguments from which few definite conclusions can be reached. There are doubts whether peace can be achieved by a threat of war, whether air forces or at any rate bombers should be forbidden, and whether civilians ought to be bombed. Such arguments will go on as long as there is peace and war and weapons. For the present we must accept the popular view that military force can ensure peace and that the R.A.F. will play its part. Starting from this assumption, we can examine the nature, possibilities and limitations of the R.A.F. so that, using the lessons of its history, we can discover how it can serve us best in the future.

The Nature of Air Forces

An air force is a highly technical organization with very specialized equipment and, as science develops, it tends to become more and more technical. It needs a large and highly skilled industry to maintain it, and it needs highly skilled and well trained crews to operate it, with a large and also skilled ground organization to keep it going. It is therefore relatively costly to create and to maintain and is apt to be a serious load on the resources of the country. For its size, an air force has enormous striking power, and now that we can examine the results of our attacks against Germany and Japan, there is plenty of evidence of the destruction which an air force can do to an enemy. It is, however, at present a relatively indiscriminate weapon. A good rifleman can kill a particular man in a crowd, but an air force to achieve the same end might have to kill the whole crowd. A good artilleryman can knock down a particular house, but to do the same thing an air force would destroy or at any rate damage the whole village. On the other hand, aircraft could put a railway centre out of action with far less damage to surrounding buildings than would be inflicted if flying bombs or long range rockets were used for the purpose. The power of an air force to discriminate is only relative, but it is an important factor governing its use to maintain peace.

In any form of warfare the most valuable feature of an air force is its flexibility. Within the range of its aircraft, it can switch quickly from one target to another. Yet in contrast to this, it is strategically immobile. It requires a very large quantity of fuel, bombs, vehicles, equipment and men to keep it running. It is easy enough for the aircraft themselves to move from one part of the world to another at very great speed and, if they are large aircraft, they can carry with them a proportion of the men and material required to maintain them. But even the largest aircraft cannot carry with it enough material for operations over any period of time. An air force must be fed continuously with supplies which can only travel by sea or land. It is true that the 14th Air Force operated in China on resources carried to it over the Hump by transport aircraft; but this was an exceedingly costly undertaking and, with air transport resources such as we can imagine at the moment, it would

only be possible to maintain a relatively small force. Thus it is fair to say that, although an air force is tactically very flexible, it depends entirely upon surface lines of communication for its strategic mobility. Some strategic mobility can be obtained by setting up air bases at suitable distances throughout the world where stocks of fuel, ammunition and equipment can be dumped. These bases can sustain operations for a limited time, but ultimately there must be a flow of supplies from the factory to the base.

We can, therefore, summarize the features of an air force by saying that it is a powerful but relatively indiscriminate force which needs secure bases and secure lines of communication in order to operate. It is tactically flexible but strategically immobile to an extent governed entirely by the capacity of its bases and of its lines of communication.

Peace in Occupied Territory

The idea of using an air force to preserve peace is not new. The history of the Royal Air Force contains many examples of its use for this purpose in India and Iraq during the past twenty-five years. Although these examples come from a history now far outstripped by the current of events, and although they concern the control of relatively undeveloped tribal territories, they provide, nevertheless, a number of lessons which we can apply to the problems which may face us in the future. These lessons can be summarized by saying that, given the right political attitude, suitable political machinery, a good Intelligence Service, secure bases and the right type of equipment, an air force is the cheapest, quickest and most efficient method of maintaining peace in any area. The proof is that those areas which have been administered in this way have been more peaceful than at any time in their existence.

The preservation of future peace has two different aspects. First, there is the task of maintaining peace in the occupied countries. This is really a problem of administration, and the lessons of air control may well apply. Second, there is the task of keeping peace between the sovereign nations of the world. This is a problem of international affairs, and the lessons of this last war will be more valuable than those of the control of tribal territory. In each instance, we must assume that there will be the necessary political attitude of mind to enable an air force to be used. There is no doubt that the peoples of the world are determined to have peace at almost any price and that they would be, at any rate at the moment, fully prepared to see an air force used to the limit of its power to that end. We must assume also that the United Nations Charter, or some other agreement, will provide the necessary machinery by which the Air Commander can use the speed and penetrative powers of whatever national, allied, or international air force is put under his command.

Because there is unlikely to be any air opposition, occupied countries are not dissimilar from the tribal territories over which air control has been exercised in the past. The security of the base will be merely a matter of protecting personnel, aircraft and installations from the efforts of saboteurs or possibly from very small scale attacks by bands of malefactors. This is really an Army responsibility and, although the duty of protecting the air base may, in fact, fall to the R.A.F. Regiment, it is nevertheless a problem in ground warfare and perhaps rather a problem in security than a problem in warfare at all. We can assume that the occupying air force will live in security in a number of permanent air bases, and that together the Army of Occupation and a Control Commission will give the Air Commander the intelligence service he needs.

The penetrative power of air forces which deprives the enemy of the advantages of natural obstacles is not going to be so valuable in occupied territory. In the more thickly-populated areas of Europe which we have to control, it is unlikely that men intent upon trouble will attempt to hide themsleves in the natural features of the land, knowing as they do that the air force will eventually hunt them out. It is much more likely that they will disappear among the population itself where the air force has no power to reach them. The air weapon is too indiscriminate to hunt out persons in a crowd. For this reason, the search for and elimination of individuals or of small bodies must be a task for the Army. In these circumstances the air force will be restricted to assisting the Army by such reconnaissance as can be made from aircraft and by providing a quick striking force if the Army run into any serious opposition.

In thinly-occupied territory, it is possible that a village, a town or even a larger area might become openly hostile to the occupying forces. Here the air force can operate in a primary role by instituting a system of air blockade ; an operation which aims at making life on the ground as uncomfortable as possible with the minimum of destruction. This principle might well be applied to the disaffected area. After ample warning to the population that air action was imminent, the air force can stop all movement in the area by attacking everything seen in the streets or in the open anywhere. There would be no point in knocking down the houses or blowing up the roads and railways. The only factor which would make the population submit would be the threat that their houses might be destroyed. As long as the house is standing there is a reason for submission. Once the house has been knocked down, there is no point in giving up because nothing can be gained by it, and the tendency is then for the population to remain hostile and spread their hostility elsewhere. After all, the object is to restore the peaceful administration of the country, and widespread destruction only makes this more difficult. Air blockade should prove effective because, by virtue of the highly-organized society in which they live, civilized peoples are more sensitive to any disturbance in their way of life than were the tribes against whom the method has been successful in the past.

If people who are contemplating trouble can see the overwhelming strength of the occupying forces, they may quickly give up the idea without any fighting at all. It may take a long time and provide a difficult administrative problem to send a large body of troops or a large armoured formation into a distant territory which threatens to be hostile. On the other hand, the speed of aircraft makes it possible for a very large show of force to be put up in a very short time with relatively little effort. The aircraft can operate from their permanent bases and have only to appear in large numbers and make a lot of noise to be very impressive. Furthermore, it is easier, by careful stage-management, for one squadron of aircraft to appear as several formations, than it is for one squadron of tanks to appear as an armoured division. All things considered, the possibility of stopping incipient unrest by a show of air power seems very great.

Since the essence of occupation is the presence of troops in the territory, it is probable that the greatest contribution which the air force can make is to carry the Army around the country. In this way, it will be possible to combine the speed and penetration of the air force with the discriminatory action of troops on the ground. If, in addition to being carried by air, the ground forces can also be maintained by air, the whole problem of control is very greatly simplified. It will no longer be necessary to maintain garrisons at short intervals throughout the country—garrisons which must be strong enough to hold off any local attack until

help could be brought. By using air power it will be possible to make substantial reductions in the overall size of the occupying forces, because much of the country can be left unoccupied and, as soon as trouble arises, the necessary force can be flown in and maintained by air from its permanent base. In the event of unexpectedly strong opposition, the covering air force can give protection to the troops on the ground until reinforcements arrive.

This aspect of the question leads to these conclusions. The air force in occupied territory needs permanent bases secured by forces on the ground. It should be equipped with aircraft of the fighter-bomber and rocket-fighter types. It is doubtful if any bombers, even light bombers, could be used, and heavy bombers will certainly be unnecessary. A few photographic reconnaissance aircraft will be required and sufficient transport aircraft to ensure the mobility of the air force itself and to move and maintain an appropriate proportion of Army combat units. Its first task will be to provide reconnaissance and air transport for the Army. In densely populated areas it can be used only to attack centres of resistance which are giving the Army serious trouble. In open country the air force can be used in a primary role against any resistance groups which are foolish enough to go into the open, or it can be used to maintain an air blockade. To make full use of its faculty for speed the air force will have to be ready at short notice, highly trained, and will need a high level of serviceability in its equipment. These standards will not be easy to maintain when, as we hope, there will be a long period of dreary inactivity broken by few brief moments of action. In these circumstances the maintenance of morale and efficiency may well be the greatest problem which the air commander has to face.

Peace Among Nations

The second part of the problem is the maintenance of peace when it is threatened by sovereign nations. This is a problem, not of administration, but of warfare, and lessons of air control do not help us much. In these circumstances any air force will have all the disadvantages which the R.A.F. had at the beginning of the latest war in that it cannot take the initiative and must first be on the defensive. Again its first care must be the security of the base. There is no doubt that the aim of any enemy will be to make a sudden, unexpected, probably treacherous, but none the less devastating attack upon the air forces of those nations who might combine against it. The lesson of Pearl Harbour is that, if ever attacks of that sort are to be successful, they must be knock-out blows followed up with such speed and strength that recovery is impossible. We shall therefore need to keep a warning system and a defensive force in a continuous state of training and at a pitch of readiness dictated by the political situation.

Assuming that we can beat off the enemy's first attacks, our next aim must be to secure air supremacy. The outstanding lesson of this war is that operations on the surface can only be carried to a successful conclusion if the battle in the air has been won. In fact, a battle on the surface of the earth may never be necessary again. For example, the destruction of the Japanese Air Force so that it could no longer offer any effective resistance to the Americans, led to the capitulation of Japan without a land battle ever being fought for the defence of the Japanese homeland. This does not mean that armies are unnecessary. Victories must be confirmed by occupation on the ground. However, in the ideal case, the Army moves forward under an air umbrella without firing a shot. The air force, therefore, will have the task of winning the victory in the air. It may do this, not only by shooting the enemy air force out of the sky, but also by attacking his airfields, bomb-launching

sites, communications, factories and assembly plants. In fact, the air force will probably aim to make as much destruction as it can in the shortest possible time. Its action here is quite different from its action in controlling occupied territories, where it aims at discomfort rather than destruction.

It is clear therefore that the air force which any nation must maintain in order to contribute towards peace should consist of a defence organization for its home bases and a striking force of bombers, with such escort photo-reconnaissance and radio aircraft as are necessary to enable the bombers to do their work. There may also be coastal and Army support aircraft the numbers of which will be dictated by the nature of the war. Behind all this there must be a backing of transport aircraft required in the first instance to provide mobility for the air force itself and then to assist in moving the land forces which will confirm the victory. The whole force would have to be organized to move quickly from its permanent home bases to any theatre, and must be trained not only to use its own weapons but to co-operate with the forces of its Allies under whatever international system of control has been devised.

It is possible that a show of force may play as important a part in keeping the peace between nations as it can in quelling unrest in occupied countries. We shall not be able to parade our air force through foreign skies or drive our tanks through foreign streets; but we can parade our military might in our own country and use the newspaper, radio and newsreel to keep our potential enemies informed. It was by this means that Hitler achieved so many bloodless victories, holding his would-be opponents enmeshed in uncertainty and fear. It was only when we faced the thing we feared that we found it not so overwhelming as we had believed. We can learn something here. If we will maintain forces of reasonable size and well equipped, and if we will take the trouble to show them off and even spend a little money publicising them, the would-be aggressors will think again before they stir, and incidentally our own people will reap a sense of confidence in time of danger. It may be said this is an operation more of propaganda than of military force; but by any name it remains a show of force in which the R.A.F. with its incomparable possibilities for demonstration, can play a full part.

The Atomic Bomb

It is impossible to discuss air power in any form without a mention of the atomic bomb. Nothing in recent years has led to so much wild speculation and to so much muddled and panicky thinking as this new weapon. Its debut is still too close for us to see its implications in true perspective, especially when its possibilities are combined with those of the flying bomb and the long-range rocket. Atomic power does not change the principles of war, but it may change the means by which we wage war. Until we see more clearly how atomic weapons are going to develop, it is unsafe to prophesy what changes they will enforce. It is fair to say, however, that in view of the time necessary for research and production, they are unlikely to affect the shape of our defence forces very greatly for a few years yet. As long as we have to police areas of the earth's surface, we shall need an air force of the kind we now possess. To a police force the atomic bomb is useless because its very devastating and indiscriminate nature rules it out as a weapon for controlling occupied territory. In the hand of a peace-loving nation its very threat is a potent weapon for peace. In the hand of an aggressor it is an equally potent temptation.

Peace by Peaceful Means

Military forces are designed for offensive action against an enemy and it is natural, therefore, that we should measure their efforts in terms of their ability to

strike and hurt. Especially is this so of the R.A.F. which, from its apparently unassailable detachment in the sky, plays its overwhelming part in the violent battles on the earth. There is, however, another aspect of its activities which can make an important and perhaps its most important contribution towards peace. During the War the R.A.F. has proved to be a remarkable instrument for bringing together peoples of different nationalities and of teaching them to know each other's habits and ways of life. It has had men of almost every nationality flying its aircraft or working on the ground. In the Mediterranean, the British and American air forces were integrated into one force. Men and formations of the two Services were treated as equals without any discrimination, and the scheme was a great success. A large number of R.A.F. personnel have been trained in Canada and in the United States. A large number of Americans have lived in England. Men of every nationality have served together in the air forces on the Continent. A common interest in the art of flying has led them to know each other personally. The war has enabled airmen, above all others, to overcome the barriers of nationality and language, and very little effort now would hold the barriers down for many years to come. If we let them rise, it may well need another world war before we can break them down again.

The range and speed of modern aircraft are becoming so great that the size of the world is vastly diminished, and it threatens to go on getting smaller at a very great speed. Even before this war, the British Isles were too small to be an adequate training ground for the R.A.F. Within the last few months we have seen aircraft of the Empire Central Navigation School flying to the Pole, and flights to India, South Africa and Canada have become routine training operations for this unit. This is a lead which the whole R.A.F. should follow. It should be regarded as a normal training exercise for aircraft of any unit to go from England to Montreal, New York or Bermuda in the same way as a few years ago they went from Northolt to Edinburgh or Glasgow. It should be easy at this time to arrange with the United States that the squadrons of the R.A.F. use the deserts of New Mexico and Arizona for their bombing and gunnery training, and squadrons of the American Air Forces do their long distance navigation training around the British Empire. The very nature of aircraft confers upon air forces an ease of movement denied to the other Services. We should use this freedom to the full and, in addition to flights by individual aircraft, should encourage visits by whole formations to take part in combined exercises or ceremonial occasions, so that each air force could come to understand the other's methods of operation. Undoubtedly the R.A.F. and the United States air forces should be the first to adopt this idea because they have already the machinery to make it work—machinery which must be preserved now if it is not to be swept away in reconversion to peace. Gradually the air forces of other nations should be invited to join in until there is a world-wide network of mutual friendship among airmen and a foundation of common knowledge among air forces which would be a potent factor for peace and would be invaluable if an aggressor ever compelled the peaceful peoples of the earth to form an allied air force against him.

Conclusion

Tempered by the experience of a long and bitter war, the R.A.F. has become a fine, flexible weapon ready to the hand of the British people. It is clear that it can play an important, perhaps the most important, part in securing a peaceful future for us and for our children; but it can only do this if the British nation is willing to make the sacrifice necessary to keep the Air Force in its strength and excellence.

THE WOMEN'S ROYAL NAVAL SERVICE IN THE WAR

By Dame Vera Laughton Mathews, D.B.E.

On Wednesday, 6th February, 1946.

Admiral Sir Algernon U. Willis, K.C.B., K.B.E., D.S.O., in the Chair.

The Chairman, on introducing the Lecturer, said that it was very evident that Dame Vera, Director of The Women's Royal Naval Service, did not require any introduction to the bulk of the audience, but for the benefit of those who did not know, she had been directing and administering the Wrens throughout the last war and was still doing so. She was a Wren herself in the war before last, so that what she did not know about the Wrens and their habits was not worth knowing.

LECTURE

THIS is the story of the building and of the achievements of the W.R.N.S. as seen and remembered by myself from my seat in the Admiralty for nearly seven years. A naval officer who was leaving the Admiralty said to me the other day " Some get a two-year sentence, some three. Your crime must have been very bad." But I do not look on it as a punishment sentence. I know I am amazingly fortunate to have had such a wonderful job and to have been able to see the whole thing through. In fact it has been more than a seven years sentence—you might almost say a life sentence, for my heart has belonged to the W.R.N.S. ever since I first read in *The Times* in November, 1917, the announcement of the formation of a Women's Royal Naval Service. I was interviewed the same day and was actually the first W.R.N.S. Unit Officer to be appointed, indeed the first Wren ever to go to a Naval Establishment.

Although my two years as a Unit Officer belong to what you might call the bow and arrow age, the experience has been extremely valuable to me as Director and incidentally it was one of the happiest periods of my life. I suppose at any time during the between-war years if anyone had asked me what I would like to do most in the world, something in my subconscious self would have answered, to be Director of the W.R.N.S. It was certainly an unconscious thought because the W.R.N.S. depended on another war and that seemed incredible. However, the stupidity of mankind apparently knows no bounds—war came and for me an unconscious dream came true.

In April, 1939, I was given a back room in the Admiralty and started by visiting Chatham and Portsmouth to get some idea of what might be needed, accompanied by Miss Goodenough who worked with me from the start as Deputy Director. At Chatham we stayed at Admiralty House and had a grand meeting in the Barracks with the Commodore (now Admiral Burnett) in the Chair and all Heads of Departments. At Portsmouth they perhaps did not take us quite so seriously but we visited several of the Establishments which were later to be such large employers of Wrens. Looking across Portsmouth Harbour and seeing the naval launches rushing about, I thought to myself, " There's no reason on earth why women shouldn't run those boats." Recently, when I was inspecting a W.R.N.S. Unit there, I asked a smart Petty Officer Wren wearing the white lanyard which is the mark of Boats Crews, " What is your job ?" and she answered " I am the Commander-in-Chief's Coxswain." But in 1939 one kept quiet about such ideas. I had arranged to spend the night on board the old Training Ship " Implacable," where I had so often spent training weeks with Sea Rangers. It was that evening, sitting in Harold Wyllie's

cabin, that I heard over the wireless the announcement that the Admiralty had decided to revive the Women's Royal Naval Service.

Now, a small announcement had already appeared in the Ministry of Labour and National Service booklet at the end of 1938 saying that the Admiralty proposed to form a small Women's Auxiliary Service to work with the Royal Navy. The probable number was suggested as fifteen hundred, largely for clerical and domestic duties, and applications were to be sent to Admiralty, C.E.I. I did not know at the time what these letters stood for but learnt later that it was "Civil Establishments" and that this indicated the proposed status of the new Women's Service. In response to this announcement some fifteen thousand women wrote in to say that they would like to receive particulars of the then entirely non-existent Service and no doubt it was partly on account of these enthusiastic applicants that the Admiralty decided to appoint someone to get on with the work of dealing with them.

When, in April, 1939, it was formally announced that the W.R.N.S. was to be revived and that a Director had been appointed, all these enthusiasts wrote in again to be sure that they were not forgotten, together with a new equally large number. Numerous enquiries were also made in person and by telephone. We had no staff at all when I arrived to find my desk piled mountains high with unopened letters, so I indicated to the right quarter that although I was quite capable of opening and acknowledging letters, I did not think it was what the Admiralty was employing me for. One piece of luck we had: in response to my urgent plea for a shorthand-typist we gained the services of an Admiralty Civil Servant—Miss Kellard—who, on the outbreak of war was transformed into a W.R.N.S. officer and has been my Secretary all through the war years.

We worked hard during those few months as the war clouds over Europe became blacker and blacker, though some of our efforts were not very useful—the number of drills to be attended in peace-time, whether uniform should be allowed or not. Only Immobiles were officially approved: they had to be living near enough to the three Home Ports, and Rosyth and Portland, to attend for training. This ruled out even applications from London. We had, of course, very good applications from all over the country and I started interviewing these and guiltily and secretly compiling a Mobile List. The entry of Mobiles was approved three days before War broke out and that list was invaluable.

Those early days of the War were incredible, as no doubt they were in other Departments, but the difficulties of organizing a new Service and administering it at the same time must be hard to exceed. We were in no way prepared for that gigantic rush of work and the demands that were made on the Service. We had no headquarters staff beyond a few noble voluntary workers who had been coming in to deal with application forms and elementary clerical work. We had no trained officers, and already demands for officers to start up W.R.N.S. Units were pouring in. There were enormous queues of women who wanted to join the Wrens and had to be interviewed, and innumerable requests from places which wanted Wrens, and there were piles and piles of dockets pouring into our one room. Also there were two telephones which went continuously from morning till night, and a typewriter which was worked unceasingly in the corridor outside in order to relieve the noise and congestion slightly. Our position was not helped by the fact that our office was moved twice in the first week of the War and in all we occupied six different offices before the end of 1942.

As I have said, it had been decided before a Director was appointed that the W.R.N.S. were to be civilians and that the Service was to be administered through C.E. Branch. I was responsible to the Secretary of the Admiralty, who was a very good friend, though tremendously busy. But I felt it was quite wrong for the W.R.N.S. to be treated as civilians and at the back of my work all those strenuous early months was the wish to run our Service on naval lines and indeed to bring it into the Navy.

We changed to a naval administration within the Admiralty in 1941 and since then I could not have had more help and support from the naval authorities there. I am not going to pretend that the first year or two were not incredibly difficult—they were. But there is no object in dwelling on that now. We lived through it and I am not at all sure that some advantage did not come out of being left so much on one's own in those early days. The organization may have been a bit unorthodox but it suited a Service of women, and indeed was working so well that when it was looked into later it was decided to leave well alone. For instance, the recruiting, drafting and appointing of W.R.N.S. officers and ratings has always been in the hands of women, and whatever changes may be found necessary in the future, I know that through the war years this has been an inestimable advantage. The care and consideration which has been given to compassionate posting has helped many a woman to carry on, and in addition, however great my admiration for the Navy, there *are* naval officers, even senior ones, whose impartiality I would not always trust when it came to appointing women.

I want at the outset to pay a tribute to the splendid senior officers of the W.R.N.S. I know that their high standards and absolute devotion to their work have helped tremendously in establishing the reputation of the W.R.N.S. A right standard of values counts more than anything else in a leader and, indeed, brains without integrity and loyalty may be a menace. Incidentally, we have all worked together with the utmost harmony, as a team, and I know that we all feel that we are friends for life.

Another chief reason for the success of the W.R.N.S. (if I may be permitted to term it so) was the attitude of the Navy to the very inexperienced newcomer. It was a tremendous innovation, and naturally there were some Commanding Officers who would rather have been without us and said so. I had a letter this week from a senior W.R.N.S. officer who is trying desperately, against all odds, to reduce the number of Wrens, and she wrote :—" They yield them up so reluctantly—those who took them so grudgingly in 1940." However, on the whole, from the very start the Navy was wonderful to the W.R.N.S., and welcomed them and helped them to that tremendous pride of Service which is the greatest incentive to achievement.

From the beginning we paid great attention to welfare conditions and accommodation, which helped to give confidence to parents when the idea of Women's Services was still new. Miss Goodenough, who was Deputy Director on the welfare side until September, 1944, is the person who deserves the credit for this.

The W.R.N.S. began slowly, which also helped. There were only about a thousand entered immediately on the outbreak of War; but the numbers grew steadily until they reached the peak figure of 75,000 in September, 1944. We could always have recruited far more than we were allowed to: the Navy wanted them and the women wanted to join, but the country's other needs and man-power problems prevented the numbers becoming higher still.

At the beginning of the War there were only five categories of work—writers, communications, cooks, stewards and motor drivers. These were increased fairly rapidly, but the general policy of the Admiralty in the early days was to employ Wrens only on work which was described in one document as "duties conventionally applicable to women."

After two years of war, however, the official policy of the Admiralty was altered and it was decided to employ Wrens on all duties on shore in which women could replace men, and the categories of work grew to number about a hundred. Really the only jobs that were excluded were posts in which a knowledge of service at sea was essential and those involving very heavy manual work.

Now I think that possibly the best picture that I can give you is to run rapidly through the war years and give you a few of the chief impressions that remain.

I have referred to 1939 a bit already. One of our chief setbacks was the frightful difficulty in obtaining uniform. The supply question for that enormous inrush in all the Services was, no doubt, stupendous, but we were not helped by having to deal with people who pretty obviously thought it was unnecessary to put women into uniform.

At the end of 1939, Lady Cholmondeley joined my Staff, and her wisdom and personality have been of the utmost value to the Service and a joy to me ever since.

All the great policy questions were still to be settled—Pay; Allowances; Insurance; Accommodation; Sick Benefits; Forms; Disciplinary Regulations; Travel; Leave. There was the start of Training and the opening of our first Depot at King's College, London; also something which has had a great influence on the Service—the first W.R.N.S. Officers Training Course at the Royal Naval College Greenwich. There is not a single W.R.N.S. officer who has passed through her course there who does not cherish the memory as the greatest privilege and honour. I am sure that the historic traditions and naval atmosphere at Greenwich have had a great influence on all of the W.R.N.S. who have served there—not only the officers but the ratings. With a start of twelve stewards to wait on the W.R.N.S. Officers Training Course in the Painted Hall in 1939, the unit grew to nearly two hundred cooks and stewards, who form the bulk of the domestic Staff there to-day, and who wait on such notable gatherings as the recent U.N.O. dinner.

In 1940, I started visiting the Ports, and between January and September visited every place where Wrens were then working. Some of the Establishments, which later grew to have many hundreds of Wrens, then had a mere handful with a Leading Wren in charge, and those early Leading Wrens were people who later became Chief Officers and First Officers. My trips included a visit to the Orkneys, where Kirkwall was one of the first places to have Wrens. Here, as in many other ports I visited during that fateful summer, they were on the look-out for invasion and were quite convinced that this would be the spot chosen. I went all down the East Coast of England, and at every place I was told that that was the spot where the Germans were going to land. The Wrens were remarkably unperturbed and full of determination not to let the Navy down.

Then came Dunkirk with the Wrens at Dover helping all they knew, preparing food and beds for those coming in who needed help so badly. Dover was not an easy place to be in after that, with the Germans on their doorstep. I visited Dover in the summer of 1940; it was the day when the "Sandhurst" and "Codrington" were sunk in the harbour. The Wrens had a tea party on in the grounds of Dover

College, which was then their quarters. Sirens and bombs punctuated the whole afternoon, but people strolled about apparently quite unaware of the fact. I remember, however, the Admiral being fetched away in a hurry when the bombs hit the ships in the harbour.

Later, when the Dover beaches seemed the most dangerous spot of all, there was some talk of putting the Wrens into plain clothes and sending them home if the worst happened. However, we were not going to have any of that. I took the matter to the Second Sea Lord and a general policy was announced that Wrens were to remain at their posts and be treated as naval personnel.

1940 saw Miss Woollcombe, who had been Chief Officer to the Superintendent at Plymouth, joining W.R.N.S. Headquarters Staff as Superintendent (Personnel) later up-graded to Deputy Director (Manning). Very soon she got to work on planning the Advancement Roster and Drafting, Training and Recruiting plans. She was the official Admiralty representative on the Ministry of Labour Man-Power Committee dealing with the Women's Services, and all the way through has made an immense contribution to the Service.

The Autumn of 1940 and the beginning of the next year saw the Battle of Britain and pretty terrifying experiences for anyone working in London or the main Ports. I never heard of any instance where Wrens failed in their duty, but I did see a number of tributes in regard to their behaviour. For instance, from Portsmouth :-

> " The air raid yesterday was not pleasant, but the behaviour of all W.R.N.S. was excellent. They were steady, cheerful and a credit to their branch of the Royal Navy."

After a very heavy dive bombing attack at an Air Station with many casualties :-

> " The manner in which the Wrens conducted themselves in first-aid parties, providing meals and generally assisting is deserving of the highest praise. Their morale was unshaken."

I can speak from personal knowledge of my own Staff in London, which was for so long the centre of attack : how cheerful and devoted they were ; working long hours, going home in the pitch blackness ; stepping over sleeping bodies on the crowded tube platforms ; making their way in somehow in the morning when traffic was entirely disorganized and when their own homes were damaged. It is something to have lived through such a time, although one feels sometimes when one hears of the terrible fate of countries not guarded by the sea that we here know nothing of the real terrors and agonies of war.

The years 1941 and 1942 saw the tremendous expansion of the W.R.N.S. particularly in the scope of their work. This was evidenced in the development of training. In 1941, Westfield College was opened as a New Entry Depot for 400 ratings, and the following year Mill Hill Depot for 850 ratings was opened by the First Lord, with nearly the whole of the Board of Admiralty present on the platform. In addition to these two large Depots there were six other Training Depots, including a large one in Scotland.

The most picturesque and popular W.R.N.S. category—the Boats Crew, was started in 1941. Plymouth was the pioneer Port and was afterwards followed by Portsmouth and other places. These girls have run the boats entirely—providing coxswain, stoker and crew—in all kinds of weather, Winter and Summer, night and

day; they have been extremely skilful, calm and confident and have loved their job. I have seen a good many letters from Wren Boats Crews to their parents containing such passages as :-

> "It was blowing a full gale last night. It was rather alarming working in the pitch blackness, but personally I thoroughly enjoyed every minute of it and came back with a wonderful appetite."

> "Our boat sprang a leak and eventually sank and we had a great time rescuing a Commander, and an A.B. who could not swim. Don't worry Daddy, we have been issued with lifebelts."

They were often on duty when a blitz was on, and a harbour or dockyard are not the best places to be at such times. There was an occasion at Dartmouth when six Focke-Wulfs dropped their bombs in the harbour, one of which sank a merchant ship. Two young Wrens who were out in a naval launch, entirely on their own, immediately went to the rescue and filled their boat until it was almost sinking. They took the injured men on shore and gave first aid to their injuries.

On another occasion, two Wrens and two naval ratings were specially commended for bravery when they took their launch without hesitation into a heavy breaking sea to rescue men who had been thrown overboard when a ship foundered. They succeeded in rescuing them in spite of the fact that their boat was being rapidly swept out to sea by the ebb tide and was in danger of being swamped.

Commendation for rather different work was earned by the crew of a launch employed on surveying duties in the River Dart. The work was described as "sometimes difficult, often strenuous and unpleasant, and once most dangerous when the boat's engine caught fire on a lee shore outside the harbour; but they were unfailingly cheerful and never flagged." The Hydrographer of the Navy wrote to me, "The all-round efficiency of this boat's crew is fully comparable with the work that would have been expected from a regular naval crew."

In August, 1941, one of the few tragedies that the W.R.N.S. has suffered hit us. Actually we have been immensely fortunate, when one thinks of all the W.R.N.S. Quarters in the target areas, in having suffered so few direct hits. This tragedy was the torpedoing of the "Aguila"—a small merchant ship bearing our first draft to Gibraltar. Twelve cypher officers and ten wireless Chief Wrens were lost—everyone of them hand-picked people for this new experiment. They were urgently needed and, in spite of the tragedy, volunteers were immediately forthcoming to take their places.

As the result of the loss of this first party the Admiralty agreed to transport W.R.N.S., where advisable, in H.M. ships, instead of in very slow transports. During the next year or two a surprisingly large number of Wrens in transit for overseas service were torpedoed, but there was only one other occasion when loss of life was involved.

Once a young W.R.N.S. officer was Mentioned in Despatches for giving up her lifebelt in the water to a sailor who could not swim. On another occasion I received a letter commending a Chief Wren who had displayed "outstanding qualities of calmness, decision and steadiness in the lifeboat which helped materially to maintain discipline and confidence."

The beginning of 1941 saw the start of the Western Approaches Command—the brains of that wonderful Battle of the Atlantic waged against the U-boat menace

which might have decided the War so differently. The Western Approaches was always a very happy Command for the W.R.N.S., partly, I think, because we started in on the ground floor instead of being welded on to the age-old traditions of the great naval ports. Anyhow, there was always a wonderful spirit of service and enthusiasm and the utmost co-operation and harmony. The Operations Room at Derby House, at the height of the Battle of the Atlantic, was a thrilling sight with W.R.N.S., both officers and ratings having a good share in the game. It was at Derby House on one of my visits that one of our greatest compliments was paid. I asked a senior naval officer if the Wrens were doing all right, and he said, " I imagine they are, as they are doing the bulk of the work and it is all going well. We don't remember that they are Wrens."

I believe it was from the Western Approaches that the suggestion first came that W.R.N.S. officers should train as Signal Officers. I do remember clearly that, when the various Ports were asked before the training started whether they would accept a W.R.N.S. Signal Officer, although all the Ports said they were hard pressed and would gladly accept a W.R.N.S. Signal Officer additional to complement, Western Approaches was the only one who said that they would give up a certain number of naval officers and accept W.R.N.S. officers instead. That experiment was well justified. The Director of the Signal Department rashly promised to present a tie to any W.R.N.S. officer who came out top of the Signal Course—a joint Course for R.N.V.R. and W.R.N.S. officers. He confided to me later that he was finding it rather a drain on his pocket. Several W.R.N.S. Signal Officers have reached the rank of First officer. At certain Ports overseas W.R.N.S. officers have acted as Port Signal Officer and Port Communications Officer, which means that they have been in charge of a large staff of mixed naval and Wren ratings, and of outlying stations. I understand that there has never been the slightest trouble of any kind with the Signal ratings which is sufficient to prove that the Officer-in-Charge knew her stuff.

The Summer of 1941 saw the start of the training of Radio Mechanics—a very large category and one which is still retained in fairly large numbers. The girls undergo a nine months technical training and specialize either in Radar or Wireless for General Service or Air Stations. At the latter they fly in the aeroplanes to test the radio equipment, even during practice dive bombing attacks. I have so often seen them at work, clad in dirty overalls, surrounded by intricate and entirely incomprehensible machinery, loving their work and wearing that slightly superior air which Radio Mechanics feel is their right. A large number of them are Petty Officers, because there is automatic promotion under certain conditions. One of these Wren Radio Mechanics was commended for her conduct when acting as W/T Operator of an aircraft in difficulties. The Special Order of the Day said, " Her coolness and skill undoubtedly proved a contributory factor in saving a valuable aircraft."

Another very large category was the Air Mechanics who underwent a four-six months training and were afterwards drafted to Naval Air Stations as Electricians, Fitters, Riggers and Gunnery. Here again, I have seen them so often on the job at the Air Stations, crawling over the aircraft in their overalls, apparently emerging from the inside of engines and not seeming to mind how dirty they were. Also, I shall never forget a passing-out parade that I witnessed at their training establishment. They marched past in their working rig of bell bottom trousers and white flannels with sailor caps, all very young and strong and healthy and keen looking. It really made one hopeful for the future.

Another large category has been the Maintenance Wrens, who have been employed in the Dockyards and workshops on a multitudinous variety of duties. Many of them became so skilled at their various jobs that a specialized category of Qualified Maintenance had to be introduced. They have been employed in engineering workshops making and repairing small parts, also in shipwrights' offices employed on carpentry, and in the armament stores, stripping and re-assembling light guns and cleaning ammunition. They have been employed driving cranes and assisting in the difficult process of slipping the M.T.Bs. after repair. They drive the tractors and manœuvre the unwieldy craft to the slipway.

Then there are the Wren Torpedomen, of whom the pioneers were selected from Maintenance Wrens. They were given exactly the same training as the men ratings and did so well that very soon the higher ratings were opened to them. A large number have qualified as Leading Torpedomen and one or two as Petty Officers, taking the same examinations as the men and replacing Torpedo Gunners Mates. Those who have an idea that women are not mechanically minded should have seen these girls at work dismantling the inside of a torpedo, cleaning and replacing the delicate mechanism.

A category which has always interested me is the Wireless Telegraphists. At the beginning of the War they were only trained as Special Operators, but in 1941 the full training—receiving and transmitting—was given, and very good they have been. Advancement is slow but they have great pride in their work and the fact that they work side by side with expert men Wireless Telegraphists, carry the same responsibilities and are reported to be a hundred per cent. efficient, is reward in itself. I remember the time when doubts were expressed whether Wrens could be employed at Shore Signal Stations because the work would involve the safety of men and ships and also because those posts would be dangerous. I quietly bided my time. Last year I had introduced to me at Portsmouth a Wren Wireless Telegraphist who was on watch at night when she picked up a radio message from an American ship which had been torpedoed. Without reference to higher authority, speed being essential, she controlled all messages to the sinking ship and directed rescue ships to the scene.

I also remember the doubts about employing Wrens as Visual Signallers. It was even suggested that the work might be physically unsuitable for women. Well, when the first U-boat surrendered at Portland, the Admiral took with him in the boat manned by a Wren Crew a Wren Visual Signaller, who maintained contact with the Naval Boarding Party on board the U-boat and informed him when the Instrument of Surrender had been signed.

Late 1941 saw the first W.R.N.S. draft to Alexandria, and the next Summer—that black Summer when disaster seemed so near—they were involved in the evacuation of Alexandria when Rommel's forces were only an hour or so away. Their adventures are a chapter in themselves—some travelled in cattle trucks, some went by sea and were torpedoed. The incident led the Admiralty to lay down as future policy that the W.R.N.S. were not to be employed in forward areas where they were likely to be involved with the enemy, but that where unexpectedly they happened to be so employed they were to remain at their posts in circumstances where naval personnel would be expected to remain.

Since then overseas service for Wrens has increased steadily and until quite recently the W.R.N.S. had a larger proportion of its numbers overseas than the other two Women's Services. A big Communications Staff in Washington has

gained laurels for its efficiency and hard work. In South Africa they were established at Capetown, Simonstown and Durban. They were spread all along the Mediterranean, Suez, Port Said, Aden, the Persian Gulf and Palestine. Malta did not come until two years later, though it looks as if it may be the last overseas stronghold for Wrens. Several hundreds were employed at Kilindini, East Africa, of whom a number moved on later to Colombo with the Commander-in-Chief and started the W.R.N.S. work with the Eastern Fleet which has been the largest overseas Command for Wrens. In India, there were Units at Delhi and Bombay and other places, and a party went off to Singapore at the end of last year. We also lent a number of experienced officers to the Indian Navy for Censorship and for Fleet Mail duties and to help with Instructional work when the W.R.I.N.S. was started.

In Australia we have had about a thousand W.R.N.S. who started there in 1944. They have sent a party from there to Hong Kong and we have just been squashing tentative efforts to send some to Japan. The Hong Kong party were transported in one of the new aircraft carriers and helped to " man ship " when the ship entered that famous harbour.

During 1942 three Senior W.R.N.S. officers were lent to Canada to start the Canadian W.R.N.S. They were headed by Superintendent Carpenter—the present Deputy Director (Welfare). I might mention here that, besides Canada and India, we have helped very actively the Polish and Dutch Women's Naval Services and have given some assistance to France and other countries.

The beginning of 1943 saw the first of those wonderful experiences for W.R.N.S. officers who accompanied Mr. Churchill on his epoch making journeys, to do communications and secretarial work. This one was the famous Casablanca Conference; other parties later accompanied the Prime Minister to Ottawa, Washington, Quebec and Crimea. We treasure a note from General Sir Hastings Ismay after Quebec, saying, " The Wrens were, as usual, the soul of efficiency and cheerfulness. They are grand people to work with."

The year 1943 saw W.R.N.S. Communications officers and ratings employed at sea on board the armed liners—a most sought after occupation, and a keen roster was maintained. Some just did trips back and forth across the Atlantic; others went all round Africa and so on and were at sea for as long as seven months on end. I have had many tributes to their work and behaviour, such as :-

> " When I first heard that W.R.N.S. personnel were to be appointed to this ship I must confess that I foresaw great difficulties. Not only has the event proved that these fears were unfounded, but the W.R.N.S. officers have been much superior to the officers they relieved."

It was in the Spring of 1943 that W.R.N.S. Boarding Officers were appointed with the Naval Control Service. This was another very popular branch of work. You will not be surprised to find that the most popular branches were those really connected with the sea. These officers went through a thorough training in all branches of N.C.S. work—navigation, chart work, signals, ocean and coastal routeing, etc., etc.—and took a pretty stiff examination. They went out in all weathers to board merchant ships, up a rope ladder and over the side, to give their confidential orders to the Masters. A year ago W.R.N.S. officers were appointed, not as Assistants but as full N.C.S. officers with the rank of First Officer, controlling all the merchant shipping of the port at Portsmouth, Bangor, Northern Ireland and Kirkwall, Orkney (all the Northern route shipping). W.R.N.S. officers have also been employed in many N.C.S. offices abroad—at Cairo and at Bombay and many other ports in

India, and have had excellent reports. I have questioned them myself and they have never had the slightest difficulty in dealing with the Masters of Ships of many different nationalities.

This has an interesting aspect in connection with the possible future entry of women to the Consular Service, one duty of Consuls being to interview the Masters of Ships, for which before the War some people might have thought women unsuitable.

The beginning of 1943 saw many hundreds of Wrens at Scapa Flow, and so closely associated with the Home Fleet in war-time. There had been a good many qualms about employing Wrens in this dreary and rather sordid place. I went up before the decision was made, and the difference between the place then and what it was when I visited it last year was indescribable. The Wrens really had imported an atmosphere of cheer and comfort and good fellowship. They did a great work there too as the ears and mouthpiece of the Home Fleet. (When the "Scharnhorst" was sunk someone said to me, trying to be funny, "I suppose the Wrens have had a hand in this!" And I said "They most certainly have.") A party of them finished up their Orkney Service in grand style last Autumn by travelling down to Rosyth in the flagship, H.M.S. "Rodney."

In April, 1943, we celebrated the fourth birthday of the Service by a Parade at Buckingham Palace, when the Queen took the Salute and the Duchess of Kent, the First Lord, First Sea Lord and Second Sea Lord were present, as well as many other distinguished Admirals. The Parade was followed by a Service in Westminster Abbey at which the Queen was present, and in the evening by a happy coincidence the Queen gave that very beautiful broadcast paying tribute to the work of the women of Britain.

All this time the work undertaken by W.R.N.S. officers on the operational side was increasing in responsibility, and in January, 1944, the Staff College opened its doors to them—only two at a time and only ten in all. The first two attained the rank of Chief Officer, one as Deputy Staff Officer (Operations) at Portsmouth, and the other as Staff Officer Planning at Alexandria.

W.R.N.S. officers at Air Stations also undertook an increasing variety of responsible jobs. They were trained Meteorologists, Air Radio Officers, and in 1944 they were appointed as Runway Control and Junior Flying Control Officers.

In 1944 all was on the upgrade. The Officers Training Course and special extra Officers Training Courses were full to bursting; we were pouring officers into the South for Duty Staff work, cyphering, secretarial work; pouring ratings in from the Northern Commands.

And then came the great event of the year, D Day—so carefully planned, so wonderfully carried through.

All the communications were manned by Wrens. I am told that that night at 1 a.m. in Admiral Ramsay's underground Operations Room you just could not move for bodies. The Senior Naval Officer, realising that there must be two watches there, went round saying, "Watch on or Watch off?" He was frequently met by, "Watch off, Sir. Please may I stay." But he was adamant and said "No, off you go."

I was shown at Portsmouth the wonderful system of radio telephony whereby after D Day the First Sea Lord in his office in the Admiralty could pick up a receiver and speak to Admiral Vian on the bridge of his flagship or General Eisenhower on the beach of Normandy. This was all worked by Wrens.

The W.R.N.S. followed the Allied Naval Commander-in-Chief to France and Belgium and later to Germany where a number still are.

Obviously I cannot mention all categories who played their part in the great D Day operation, but just a word about the Cooks who worked all night with cans of hot tea and soup and meals for survivors from the French Coast. What a grand job our Cooks and Stewards have done. The domestic categories are the largest in the Service, though some people seem to think the W.R.N.S. is entirely composed of the daughters of Peers and Admirals. They have had their adventures like Dunkirk and D Day, and those Cooks on the East Coast who looked after the wonderful young men in Coastal Forces who went out in their tiny craft to chase E boats. They have had their great honours, like service in the Painted Hall at Greenwich and in Nelson's wardroom in the "Victory." When I was lunching on board this week, I wondered as I looked at them what Nelson would have thought. I think perhaps he would have conceded them a place. The great bulk of the work of these categories though has been unspectacular and without glory, but they have been the backbone of the Service, loyal and devoted and knowing their own importance. Even the Staffs in W.R.N.S. Quarters take great pride in their work, knowing that everyone else's work depends on them.

We have now come to 1945 when the highest peak in numbers was past.

VE Day came, and with it a message from the Board of Admiralty saying: "The loyalty, zeal and efficiency with which the officers and ratings of the Women's Royal Naval Service have shared the burdens and upheld the traditions of the Naval Service through more than five and a half years of war have earned the gratitude of the Royal Navy."

Then all eyes were turned to the East, and overseas service seemed of paramount importance. But, so suddenly that for a time we felt stunned and numbed, came VJ Day; and miraculously the great task was over.

Since then we have been engaged in pulling down the great organization which has now achieved its purpose; we are busy, too, with resettlement work and vocational training and on work for the future, such as the W.R.N.S. Benevolent Trust and the Association of Wrens, which will help to keep alive the W.R.N.S. spirit.

Reductions have proceeded apace; 25,000 have gone already, and we shall be down to 15,000 by June. It is just like standing on a block of ice and watching it melt away under your feet. At the end of 1945 most of the technical and operational categories had completely disappeared—Boats Crews, W/T and V/S, Torpedo and Maintenance Wrens. By the end of June, 1946, many more categories will have closed, including nearly all the Communications Wrens who have been such a feature of our Service since its beginning.

I am told that when the Admiralty Letter announcing this decision came out, the Signal Officer at one of our famous naval ports wrote on the minute sheet, "What a blow for the efficiency of the Navy."

After June, 1946, there will be a limited number of categories with their future still undecided—all the Writer and Supply categories. I have not said much about these two very large categories but their work has been some of the most important accomplished by the W.R.N.S. for the Navy—quiet, unspectacular and reliable. The good work of Wrens in the offices is one of the chief reasons which have led Their Lordships to consider (repeat consider) the retention of a small permanent Service. The Pay Writers are very important at present, working long hours on

the pay documents of the men who are being released. The Supply ratings have been invaluable too: all the different kinds—those who victualled the ships that crossed to France and saw that they had all the stores and food they needed; those in the Clothing Store, who take a personal interest in their "customers." Other categories that will remain after the Summer, though greatly reduced, include Cooks, Officers' Stewards, Air Radio Mechanics, Motor Drivers. The drivers also have done a great job, especially at the time of the Invasion, often driving lorries with supplies all through the night. Another category remaining for the present are the Fleet Mail Clerks. Through the most difficult period of the War in overseas bases, the mail for the Fleet, on which the morale of the men so much depended, was handled entirely by W.R.N.S. officers and ratings.

It is a very sad time but not altogether so, because one feels so sure that there is something permanent, a spirit of Service that is going to last for always. Here is one example, I was yesterday at the King George's Club in Piccadilly and the Y.M.C.A. Officer in charge of the Club told me that during the recent gas strike an Ex-C.P.O. Wren Cook produced 120 breakfasts—porridge and all—cooking on primus stoves. When she was congratulated she drew herself smartly to attention and said: "Ma'am, the Navy is always there." Every day I get the most wonderful letters from officers who are leaving the Service speaking of the inspiration and knowledge they have gained through these years with the Navy; as one put it, it is "their carefree, almost humorous way of tackling stupendous difficulties." Well, we shall certainly need all the inspiration and knowledge—and humour—we can scrape together to help us through the coming years.

The memory of the public is notoriously short. One day "The Wrens are marvellous," the next they are just women looking for jobs and wanting a square deal in industry and the professions. I do sincerely trust that the country in its rightful wish to do everything possible to help Ex-Service men, will not forget the Service women who have worked so hard and whose specialized knowledge should be used in the future in other ways for the country's good.

DISCUSSION

REAR-ADMIRAL G. E. CREASY: If I rise as a questioner I am sure the Lecturer will know that I am a very friendly one, and so I jolly well ought to be after all the good work the Wrens have done for me. I appreciated the way in which the Lecturer wrapped up the identity of the senior officer who threw the Wrens out of the War Room on D-day. I was Chief of Staff to Admiral Ramsay at the time and I can only plead that they were too thick on the ground! I had further reason to know of their wonderful work when one and a half years ago I took over my present command and found myself relying entirely on Wrens for all secretarial work and practically all communication work. It was splendid to see how well they did it.

I understood from the Lecturer that when she started this great snowball, if I may call it so, she had her own experience as a Wren of the last war to fall back on but, as far as I could make out, she had nothing else whatever. She had no records, no skeleton organization, and nothing passed on to her by her predecessors of 1918. I should like to know whether or not that is a fact and, if so, whether it has been borne in mind with a view to ensuring that such a state of affairs does not exist again.

THE LECTURER: There was no skeleton Service at all. The last Service was completely demobilised when it ceased to function in 1919. There was, of course, a large volume of papers relating to the past Service and there was a memorandum making suggestions for the future from the Director of the former Service—Dame Katharine

Furse. I read through all those documents, but there was nothing which was of very much help in starting a new Service. The old Service broke the ice for us and left behind a good tradition, but it was very small and very short.

With regard to the present, a historical record of the W.R.N.S. is being compiled. Also of course one hopes that there is going to be something in the nature of a Reserve Service to form a permanent basis for the future.

GROUP CAPTAIN S. D. CULLEY, R.A.F.: I was in the Royal Naval Air Service in the 1914-18 war and I had a certain amount to do with the W.R.N.S. in those days. I was a fighter pilot and had two Wrens to look after my aeroplane. It was a very dirty machine with a rotary engine, but those two women seemed to take pride and joy in looking after it. Every time I landed, out came the soft soap and rags, and they washed the whole thing down so thoroughly that in the end I felt rather ashamed to take off again.

CAPTAIN E. ALTHAM, R.N.: Having had something to do with the W.R.N.S. in two major wars I should like to pay my tribute to their very fine services.

A small personal incident at the end of the 1914-18 War is typical of the enterprise of the W.R.N.S. of those days. Just after the Armistice I was appointed Chairman of a Three-Service Committee to report on the whole system of the German defences of the Belgian Coast, and we needed motor drivers. Practically all the Service men drivers had been snatched to go to Paris and we could not raise one of any sort, so I rang up the appropriate department in the Admiralty and said: "How about a couple of Wrens?" They told me it was quite impossible and that Wrens could only be sent on overseas service as a detachment with an officer in charge. However, W.R.N.S. headquarters evidently got wind of my enquiry and ten minutes later I received a call from them saying "Of course we can provide drivers." "All right," I replied, "the ten o'clock train from Victoria to-morrow." At ten o'clock the next day there was waiting a lady in the largest Nelsonian hat I have ever seen and from behind her there stepped a neat little Petty Officer Wren—the "detachment," and off we went.

During the late war I was so fortunate as to have a large number of W.R.N.S. officers pass through my hands to receive a most intensive course of training in Naval Censorship; many of them afterwards served in my Department. Theirs was a particularly difficult and highly responsible job: I cannot think of any more delicate task for young women to be entrusted with than the necessarily unpopular one of censoring private correspondence; but they at once grasped what was expected of them and, by their fine example of integrity and discretion, won the confidence of all officers and ratings with whom they had to deal.

Not only did those officers and ratings willingly accept that censorship of their letters should be done by these W.R.N.S. officers, but the W.R.N.S. Censors succeeded in imbuing them with a sense of the vital importance of operational security to an extent which I do not think they would have acquired in any other way.

The landings in North Africa and Sicily were immediately successful on account of operational surprise. D-Day was also such a great success largely due to the same reason; and that operational surprise was secured, in no small measure, because Naval Censorship developed a sense of responsibility for security amongst the officers and men, and they were careful not to impart through their correspondence information which might have got to the enemy and would then have led to disaster.

Early in the War, the Director did me the honour of coming down to a lecture on Naval Censorship which I gave to her O.T.C. at Greenwich College. When I had finished, she was kind enough to say "Now I understand why Captain Altham only wants the best of my officers." I can only say that she could not have sent me better, and I think not merely I, but the whole Service has reason to be very grateful indeed both to her and to them.

THE CHAIRMAN

Dame Vera has given us an extremely interesting run-over the manifold activities of the W.R.N.S., but lest anyone should think that they are a hundred per cent. perfect or too good to be true I think I ought to say that the Wrens are naughty sometimes! I hasten to add that their indiscretions are extremely rare; at any rate, very few have reached me.

I saw little of the W.R.N.S. until the middle of 1943, but I remember in the middle of that year, when I was commanding Force H, I had to come home in my flagship before the Sicily landings and arrived at Plymouth in June. The first boat which came alongside was manned by Wrens and impressed me very much—and the sailors too. It impressed others still more, because I brought home in the ship six German General prisoners who had been captured in Tunisia. They were landed blindfolded at Millbay, and I happened to be going ashore at the same time. When they stepped ashore it was the drill apparently to remove the covering from their eyes, and the first thing they saw was an extremely smart Wrens boat's crew. Their eyes nearly stood right out of their heads.

I was very interested in what Dame Vera said about the difficulties encountered in the early days when the W.R.N.S. was started, and how some senior officers were not at all receptive. Well, if there were any sceptics at the beginning, I am sure there were none at the end. I can say that one and all in the Navy, from Admiral down to Boy, take tremendous pride in our Wrens, and the whole Navy is very conscious of the essential contribution that they have made to the naval war. They have done every kind of job short of actual service in warships on the high seas, and I can assure the Director that we shall miss them very much. Nobody has asked me whether the W.R.N.S. are going on in peace time, and if they had I could only have replied by saying, as they do in Parliament, that the matter is under active consideration.

It is a regret to me that this is probably the last time I shall appear on the same platform with Dame Vera, not because she is going but because I am, and I should like to take this opportunity of paying my personal tribute as Second Sea Lord to the very great work she has done. Through fair weather and foul, most ably assisted by her Headquarters staff, she has kept the W.R.N.S. ship on its course, and she has brought great character, fine judgment, and great human understanding to the administration of her wonderful Service. When it is run down to whatever its number is going to be at the end of the year, all those many young women who have left can always feel that they have done their job well.

The customary votes of thanks to the Lecturer and Chairman were carried by acclamation.

A NEW FILING SYSTEM FOR THE ARMY

By MAJOR E. A. RUNACRES, Royal Engineers.

NO one who has worked as a staff officer in a large headquarters will disagree about the astonishing inefficiency of Army filing systems. To call most of them "systems" is, in fact, an elaborate piece of false politeness, since it suggests that a process of coherent and rational thought has gone into their shaping.

Army registries, as opposed to civilian, suffer from two disadvantages :—

(*a*) Much more is committed to paper.

(*b*) The clerks (officers and other ranks) have rarely received any training in modern filing systems such as are used by, e.g., a big insurance firm.

Especially in large headquarters abroad which have opened during the war, the "system" employed was often whatever the hard-pressed chief clerk could devise at the moment. With these uncertain foundations it is quite understandable that a vast superstructure has developed incurable faults. Standardization has made many notable and useful conquests in the Army, even in territories which at first seemed unpromising (e.g., platoon battle drill) ; it is high time it invaded a hitherto reactionary neutral.

In order to shape any definite proposals for improvement, we must first consider the object at which any filing system must aim. This is much more than a mere orderly arrangement of outgoing and incoming correspondence ; it is, in fact, that any piece of information should be immediately available in an easily readable form.

The usual shortcomings are :—

(*a*) Files are opened at random, and often given an entirely unsuitable name, e.g., whatever happens to appear as the title of the first letter.

(*b*) Registry clerks, as a corollary, do not know what files already exist on a subject and, therefore, open unnecessary and redundant fresh ones.

(*c*) Files are normally an agglomeration of letters and minutes ranging roughly round the same subject. Anyone who comes fresh to that subject and wishes to know how it stands at the moment must usually read it right through.

(*d*) As a result of (*a*) and (*b*) the file numbers of two closely connected files may give no clue that they are so related.

Of these (*c*) is undoubtedly the most important. When a brief has been called for on a subject with which one is not familiar, everyone must have experienced the feeling of hopelessness caused by commencing the laborious task of going through the correspondence, much of it completely out of date, and by the uneasy idea, always at the back of one's mind, that *all* the relevant files may not have been produced.

Compare this with, for example, a large newspaper office. Information on all conceivable topics is kept absolutely up to date so that articles can be written at extremely short notice. When, during the war, by a surprise move of the Allies, the Azores were suddenly taken over, the newspaper editor, preparing a leader, did not have to hunt through files—one dealing with the geography of the island, the second with the type of vegetables grown there, the third with customs duties, and so on. He could at once turn up a concise description of the place which would probably go into the article almost without alteration, make up a few lines on the strategical

advantages likely to accrue, and add a headline: "Another brilliant proof of the value of our oldest Alliance." The German editor in Berlin would have exactly the same facilities and would merely have to alter the headline to: "Another treacherous violation of neutrality by the Allies."

How is such a standard to be reached in the Army? Take, as a start the pure mechanics of the filing. Files cannot be opened at the vagaries of clerks (or, for that matter, of staff officers); there must be a set plan to work to. Consider the similar problem of a large library which has a continuous inflow of books. A system which has become widely used, especially for public libraries, here and in the United States, is the Dewey decimal system. The inventor divided the subjects of literature into ten classes, each denoted by sets of numbers—000, 100, 200 and so on; within each class, divisions were denoted by, e.g., 201, 202, 203: further sub-divisions still by, e.g., 201·1, 201·2, 201·3; within these, he arranged by alphabetical order. He provided a small book laying out the classification, and anyone, after even a cursory glance through it, can make a very reasonable shot at finding the relative position of any book in a library which uses the system. A further advantage is that any one book has the same number and relative position in every library. Anyone who has read in such disparate establishments as, say, the Oxford Bodleian or the Quetta Staff College library (neither of them using the Dewey system) will appreciate such an advantage.

I wish to suggest this system, modified for military purposes, for use in the ordering of large-scale filing systems. The classification book would have to be produced by the War Office and published as the standard arrangement. Clearly there would be room for some argument on this, and I do not intend here to put forward my own; otherwise such merits as the system might have may be obscured by disagreement over detailed application. Once in operation, any new subjects which arose and had to be included could be given a place through the medium of Army Council Instructions. Every file in the Army on a given subject would have the same number; the reference number placed on any outgoing letter by the issuing office would ensure mechanically correct filing by the recipient.

So much for ensuring that letters, reports, etc., are rationally filed and can therefore be found when required; next comes the co-ordination of information. Broadly speaking, there are two ways of doing this—by card indexes or by summaries on the files.

Card indexes.—These have, if well planned, the advantage of easy reference. A good card index system is often found in conjunction with bad filing, since the person detailed to keep the former up to date will usually take more trouble than if he had merely to place a letter on some file or other, and, in addition, he has the responsibility of producing any piece of desired information rather than a mere bundle of papers. On the other hand, the card index summarizes information already in the files, and owing to the difficulty of moving the card index, the two cannot usually be consulted together. The card index which is nothing more than an index to the names of files is merely a remedy necessitated by the vices of a filing system. The method of filing suggested here produces automatic self-indexing.

Summaries on files.—Inside the front cover of every file should be a sheet (or sheets) summarizing the subject dealt within it, and referring to relevant information to be found in other files (*not* merely by numbers or titles). As files are closed, these sheets could be filed away and would always provide a useful record for anyone

wishing to review the past history of some work or subject. Such summaries would be kept up to date by an officer responsible for each particular subject.

Suggesting a system of this kind, even if it were accepted by the Army, is very different from carrying it into practice. Army officers' training makes them consider (quite rightly) that service in the field is the end to be achieved; and they will take great pains to see that nothing is wrong with the discipline, equipment and internal economy of their units or commands. The routine of office work does not occupy a high place, if one at all, in the subjects they study. It is, therefore, quite probable that when such officers reach high staff rank they may allow themselves to be served, for example, by a filing system which represents the sort of disgraceful muddle they would never for one moment have tolerated in unit monetary or clothing accounts.

The senior officer's duty, in a large headquarters, is to think and decide on problems placed before him. He is provided with a staff whose function is to supply him with information bearing on those problems, and to prevent him from having to become immersed in details. On the other hand, he is responsible for seeing that the conditions exist in which his staff can serve him to the best of their ability. Many staffs spend far too much of their time searching, not always successfully, for information required, and far too little ordering it in a logical and coherent form for their superior.

The system suggested would go far to removing these difficulties, but initially a great deal of inertia would have to be overcome. It could be successfully enforced only when it is realized that, especially as war becomes more technological, efficiency in such matters is just as important as in any other sphere.

CASUALTY EVACUATION AND PROVISION OF REINFORCEMENTS

By Colonel J. D. Welch and Major F. R. Bond

WORLD WAR II has introduced outstanding scientific discoveries for the maintenance of the health of troops in the field and for speeding up the return of wounded and sick soldiers to their units. We have mepacrine, the sulpha drugs and now penicillin. But these improved methods of treatment cannot achieve their fullest effect unless improved administrative arrangements for the evacuation of casualties and movement of reinforcements keep pace with them. Fortunately, in the administrative field, the introduction of Air Transport promises to make possible these administrative improvements. We have already had some small experience of its possibilities, but owing to shortage of aircraft its full potentialities have never been exploited nor are they generally realized. The article that follows criticises our present methods and suggests improved systems for use in the future. It is divided into two parts :—

Part I Evacuation of Casualties
Part II Provision of Reinforcements

Deliberately, we take the evacuation of casualties first, since the casualty is the " raison d'etre " for the reinforcement.

PART I—THE EVACUATION OF CASUALTIES

Present Methods

The " classical " surface organization for the evacuation of casualties envisages the battle casualty and the sick soldier first receiving attention at their Regimental Aid Post and then passing back through an Advanced Dressing Station to a Main Dressing Station, whence they move through a Casualty Clearing Station to an Advanced Base Hospital. From there, if they are lucky, they are evacuated out of the immediate theatre of war. But this war has been fought under vastly different sets of conditions, which have very properly caused wide variations from this " normal " procedure. Thus, at one extreme, we have the wounded soldier from France flown home in an aircraft to hospitals in England ; and, at the other extreme, we have the soldier in Burma only evacuated if he could not be cured forward in a period of less than three weeks. But, whatever the system, whatever the variation from it, whatever the theatre of war, certain conditions influence the efficiency of all systems of surface evacuation.

In the first place, medical officers and trained medical personnel are always in short supply. Yet large numbers of them, who might be employed in curing sick and wounded, are only engaged in passing them on to other medical echelons.

Secondly, after a battle has passed over a stretch of country, the roads are always bad. Even with modern ambulances and careful driving, it is the prolonged road journey which so often retards the recovery of the patients. In their own words it is the road journey that " knocks them up " or, more simply, " is just hell."

Thirdly, if a man can be moved quickly and smoothly into a hospital out of which he will not immediately be transferred, his chances of speed of recovery are considerably enhanced. It is a matter of common knowledge that frequent movement of patients is an important factor in lengthening their stay in hospital.

It must be admitted that these points detract from the efficiency of all surface systems of evacuation.

Again, if we follow a casualty farther down the surface lines of communication, we find that he can only be comfortable in movement when he is travelling by rail or by sea. But such transportation agencies not only take long to establish, they also carry large numbers of men at widely spaced intervals. They cannot maintain a continuous flow. To meet this drawback, considerable hospital accommodation has to be established at both ends of rail and sea links. Such hospitals are not engaged in their proper task of making men fit to return to the line, but are only holding them for the transportation agency. Just after the train or ship leaves, these hospitals are empty; whilst it is not unusual to find casualties evacuated, not because their condition made it necessary, but simply to ensure that the train or ship moved full.

A fundamental of good medical services is that the patient should reach his place of definitive treatment and final cure as rapidly and as comfortably as possible. Under the present system, this process is unduly delayed, with resulting inefficiency of treatment for the patient and waste of medical man-power. Let us examine a makeshift system that was improvised in Burma.

Evacuation of Casualties by Air from Burma

The evacuation of casualties by air when instituted in Burma was remarkably successful and transformed the situation. In general the troops, as they advanced, constructed light aircraft strips close behind them. Every morning light aircraft landed at these forward strips, picked up their casualty and flew back to the Casualty Clearing Station or Corps Medical Centre as it was more generally called. This was sited close to the light aircraft base. After treatment at this centre, patients were flown back to hospital in the supply aircraft which were returning empty.

This system was a big advance over evacuation by surface routes because a number of medical echelons, whose chief task was passing men on, were cut out, and because the long, jolting journey over bad roads was replaced by a smooth passage of a few minutes in a light aircraft, with the result that the casualty arrived back at the Corps Medical Centre in as good a state as possible. After a day or two there, the patient was again back in a base hospital in a few hours.

It must not be imagined, however, that this system of evacuation worked with the smoothness that its simplicity ought to have made possible. In the first place the R.A.F. had never officially accepted the responsibility for flying out casualties. The arrangements for doing so were largely left to the co-operation and initiative of local commanders. As a result the air lift was superimposed on the existing ground medical organization, instead of the ground installations being organized to fit in efficiently with the method of transportation. The number of light aircraft to be provided was assessed more by seeing what would be left over after the demands for artillery reconnaissance and inter-communication had been met than by any system of forecasting the casualty rate and providing the necessary light aircraft to meet it. In any case the majority of the light aircraft came from the United States Army Air Forces and not from the R.A.F. at all. Control of aircraft was also inadequate from the medical aspect. This led to patients being kept waiting on airstrips, sometimes all day, for aircraft which never came, whilst in rear patients were being delivered at airfields far removed from the hospitals to which they were required to go. They then had to be transferred to their proper hospital by being

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bumped in ambulances over bad roads, thus nullifying to some extent the benefits of the air journey. The aircraft employed had not been designed for the evacuation of casualties, and were uneconomical for carrying lying patients. The parties loading the aircraft were untrained in tasks which required considerable skill.

Yet in spite of the shortcomings of this improvised system, it is repeated that the provision of aircraft for casualty evacuation transformed the situation. The continued use of motor ambulances, trains and hospital ships is now, because of the time involved and the inevitable bad roads, as out of date, under operational conditions, as was the use of horse-drawn ambulances once motor vehicles had been produced. Under modern conditions a system is required which provides for the evacuation of the casualty by air all the way from the forward area of the battle to base hospital and beyond. A suggested system is examined in the following paragraphs.

Suggested Casualty Evacuation System

A suggested casualty evacuation system is shown diagrammatically in Figure 1. A number of points in this diagram require amplifying :—

(*a*) The Casualty Clearing Station or, as we will now call it, the Corps Medical Centre, retains its past functions and remains the hub of the whole system forward from it.

(*b*) The Corps Medical Centre is dispersed but sited close to, and clear of, both the light aircraft base and the advanced landing ground, thus ensuring the shortest possible road journey.

(*c*) The divisional field ambulances are completely reorganized. Instead of a main dressing station and two advanced dressing stations, there will in future be three forward airstrip detachments whose task will be :—

(i) To prepare and load patients for the light aircraft journey to the Corps Medical Centre.

(ii) To hold and cure patients who can be cured in, say, four days.

(iii) To hold patients overnight or when weather prevents air evacuation.

(*d*) The light aircraft are controlled and maintained from the light aircraft base (two strips). They should only wait at the forward strips long enough to pick up a casualty and should then immediately return.

(*e*) Similarly the hospital aircraft are controlled and maintained from the advanced base. Here the advanced base hospitals again are in close proximity to the advanced base airfields, which should be able to serve more than one corps or, better still, be used for purposes additional to casualty evacuation.

(*f*) Adequate medical communications are an essential part of the scheme. It is intended that forward airstrip detachments and the Corps Medical Centre should have their own wireless net.

But these points are largely generalizations. It is essential to make some detailed examination to see whether the system broadly outlined above is a practical proposition, and to answer such questions as :—

Can you construct light aircraft strips ?
How many aircraft will be required ?
What about air superiority and weather ?
How will the sick be treated when formations are not in the line ?
What will be the effect on man-power?

The Construction of Airstrips.—The Burma campaign witnessed the construction

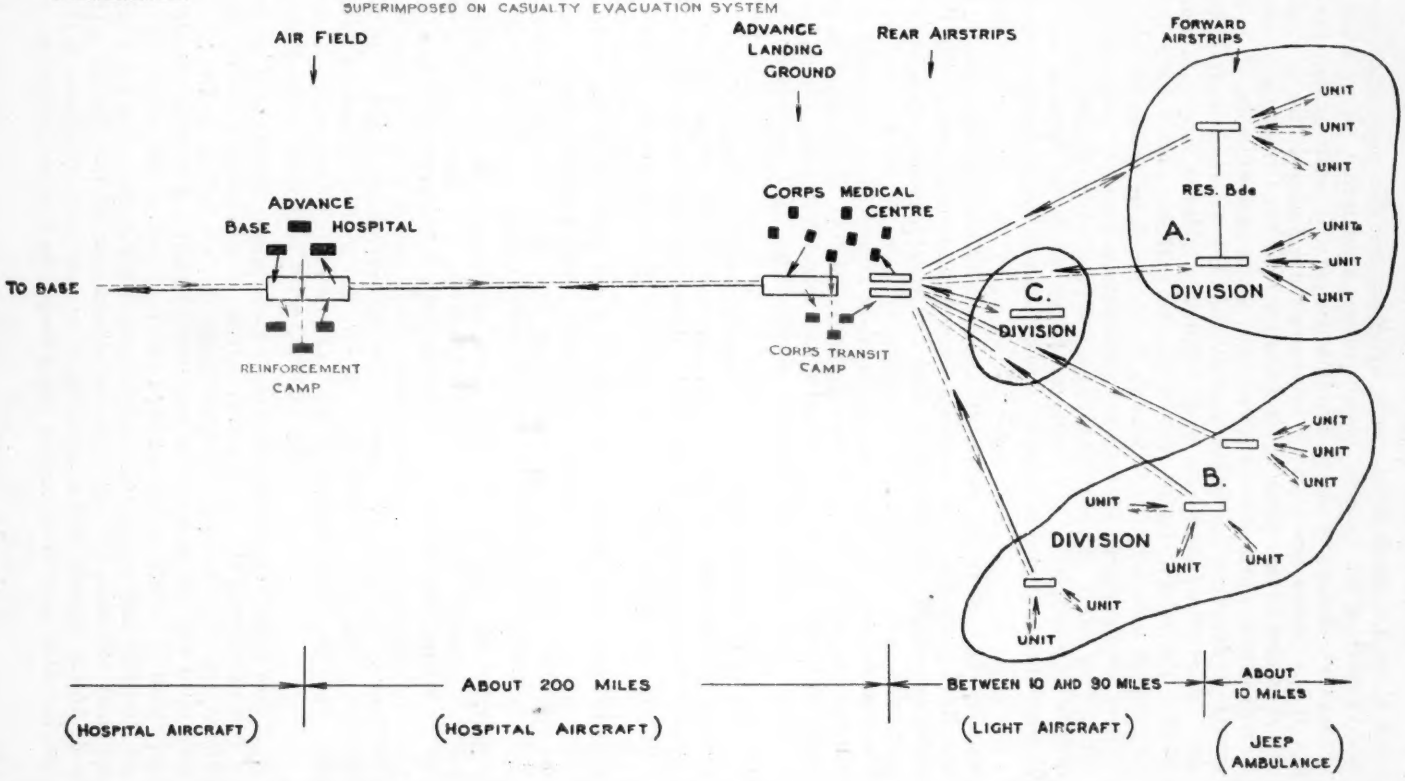
FIGURE 1.

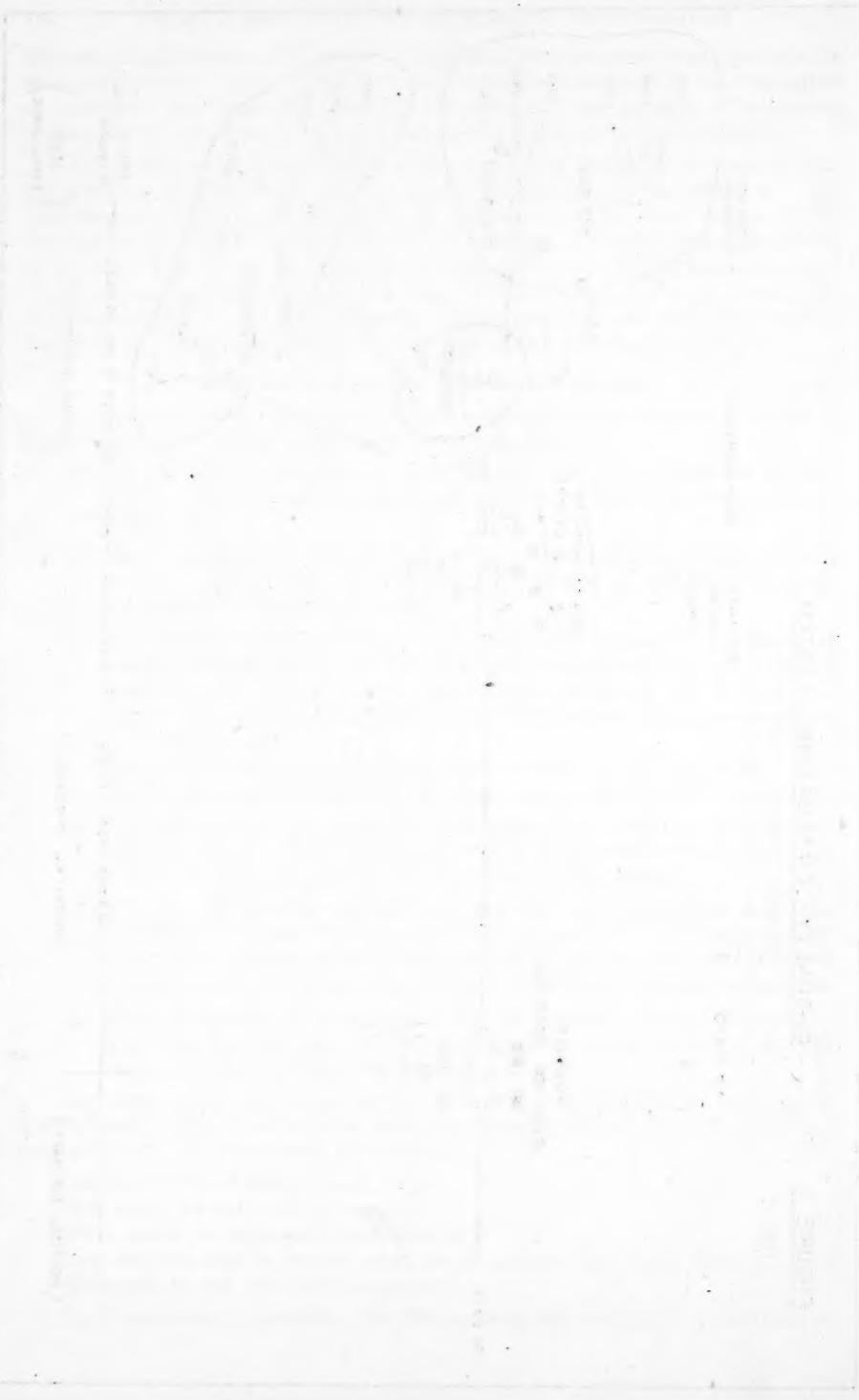
FIGURE 2.

CASUALTY EVACUATION SYSTEM

REINFORCEMENT SYSTEM

SUPERIMPOSED ON CASUALTY EVACUATION SYSTEM





of airstrips under many different conditions of terrain, from the flat paddy fields of the plains to the mountainous country round Tiddim. Little difficulty was experienced in siting strips. The requirements of 200 yards by 30 yards of reasonably smooth ground with approaches unencumbered by trees was simple, and it was exceptional for troops to build any strip which subsequently aircraft refused to use. Analysis of the effort involved in the construction of these strips showed that an average of 400 to 500 man-hours of unskilled work was all that was required. During an advance they were probably constructed about once every twelve miles. This is an effort which, to get casualties out, any infantry brigade will be glad to make. But the aircraft usually employed were L.5's which had never been designed for casualty evacuation. It is not unreasonable to suppose that designers could produce an aircraft which would require less than 200 yards of take-off. If this were so, the construction of strips would be further simplified. It is certain that airstrip construction has seldom proved any difficulty. Future developments will make it easier still.

The number of aircraft required per corps.—Before we can arrive at any estimate we must make certain assumptions as regards distances, sick rates, etc. The figures chosen are, in general, those obtained as a result of analysis of the Burma campaign. They have been selected because they happen to be available. There is nothing significant in them and, if different assumptions were made, the conclusions would in no way be invalidated. Detailed calculations would be tedious in a paper of this nature and are not shown. We must ask the reader to accept throughout the result of these calculations. The assumptions required for calculations may be enumerated :—

(*a*) The Corps consists of three divisions with a total strength of 57,500.

(*b*) The sick rate is officers five per cent., other ranks nine per cent. of the strength of the force per month. (This sick rate has been selected as the highest which occurred in Burma at a time when a high rate of battle casualties also arose.)

(*c*) The Corps is operating 200 miles from its advanced base, and divisions are between ten and ninety miles ahead of Corps.

(*d*) Twenty per cent. of the sick and thirteen per cent. of the wounded are cured without evacuation behind forward airstrip medical detachments.

Working from these assumptions, we find that the average number of sick per Corps per day is 144. But as twenty per cent. are cured forward, the actual number of sick to be evacuated by light aircraft is 115. Under conditions of intense activity as experienced in Burma, ninety-seven casualties may be expected in the Corps per day. But as thirteen per cent. will be cured forward, eighty-four casualties will require evacuation. There will then be 200 patients, both sick and battle casualties, to be evacuated per Corps per day of intense battle activity. This figure cannot last for more than a few days at a time.

Now the light aircraft employed for casualty evacuation in Burma were L.5's. They only carried one passenger in addition to the pilot. They were very easy to maintain ; so much so, that the U.S. Army Air Forces kept 96.7 per cent. of such aircraft serviceable for long periods. These same aircraft were also able to do seven sorties a day for the two or three days that intense activity lasted. If we assume six sorties a day and ninety-five per cent. serviceability, we see that thirty-six, say forty, light aircraft will be adequate to evacuate the 200 casualties from one Corps. It is certain, however, that we could design a light aircraft to take three casualties instead of one without requiring any increase in the size of the airstrip.

Such already exists in the United States in the form of the L.1 " Vultee Vigilant." This would enable us, under Burma conditions, to reduce our number of aircraft to twelve only per Corps.

It is realized that these figures for battle casualties are far below what may be expected under European conditions. But we have no other figures available on which to make calculations. Even if European figures for battle casualties exceed Far Eastern figures by a factor of three or four, the number of light aircraft required to evacuate such casualties is still comparatively small. Thus, if the casualties to be evacuated per Corps per day amounted to 600, then thirty-six, say forty, properly designed light aircraft is all that would be required. This figure compares favourably with the 180 ambulances that would be necessary. This big reduction in numbers is primarily due to the speed of turn-round of light aircraft, which can do five or six sorties to one sortie of the motor ambulances. Further, it must be remembered that the flexibility of light aircraft enables them to be switched from airstrip to airstrip and even from Corps to Corps at a moment's notice and with a speed that is impossible with motor ambulance convoys. This makes them particularly suitable at moments of intense activity.

Air superiority.—It may be thought that it will not be possible to operate large numbers of small aircraft far forward in the battle unless overwhelming air superiority exists. But this has not been the case in practice. During the second " Wingate " expedition, when air superiority was by no means complete, hundreds of men were evacuated from 200 miles behind the enemy's lines with infinitesimal casualties to aircraft from enemy action. Experience has shown that, since they are not confined to any route, and since they move at about four times the speed, light aircraft are much less vulnerable than motor ambulances to enemy air attack. They are not a worth-while target for enemy fighters.

The weather.—Again it may be argued that bad weather will interrupt evacuation of casualties by air to a greater extent than if they were evacuated by surface routes. There may be some truth in this connection. But, again, experience in Burma showed that monsoon weather interfered with air movement little more than the results of monsoon weather interrupted surface lines of communication. Further, surface lines of communication are always liable to temporary interruption by road congestion and enemy bombing on towns or defiles. Aircraft cannot so be interrupted. Even if the weather does close down, casualties can always be held for twenty-four hours. This bogey of the weather appears smaller and smaller the more we examine it.

Personnel.—The system envisaged makes some savings in man-power—an important point since the saving of man-power will always be vital in the conduct of any British campaign.

It seems that a strength of 80 all ranks is adequate for each forward airstrip detachment. The medical personnel in the division would then be 240 instead of 730, *i.e.*, a saving of 490, or per Corps	1,470
One general hospital would no longer be required for holding casualties for hospital train and/or ship, *i.e.*, a further saving of	400
One ambulance train can be dispensed with	40
Approximate total saving of Medical Personnel per Corps	1,910

But, on the other hand, additional R.A.F. personnel will be required :—

One squadron of 40 light aircraft	400
Twelve hospital aircraft plus maintenance and 25 per cent. increase in rear maintenance	560
	960

Thus we see that a total man-power saving of 1,910 less 960, *i.e.*, 950 personnel per Corps may be expected. This is a low figure, but, if the aircraft can be used for purposes additional to casualty evacuation, considerable additional man-power savings may confidently be expected. This will be dealt with in Part II.

Evacuation of sick when out of the line.—The field ambulances of the division have performed in the past many useful functions when they are not working under operational conditions. They act largely as a store depot for regimental medical officers, they assist these officers with maintenance work like inoculations, they undertake dentistry and take minor sick off units' hands. These functions have still to be performed under the suggested system. They must be divided between the Corps Medical Centre and the forward airstrip medical detachments. Inoculations and the holding of minor sick can be undertaken by the forward detachments whilst the Corps Centre should undertake the functions of dentistry and store holding. The former function can be performed by means of mobile dental surgeries and, with their wireless net, forward detachments should easily be able to demand stores for units from the Corps Centre.

Part I—Summary

We are now in a position to summarize the arguments for a change from the present surface system of casualty evacuation to one which envisages a system of complete air evacuation.

The qualitative advantages are overwhelming. The appalling road journeys cease ; the patient will reach proper hospital accommodation in a matter of hours instead of days ; his chances of recovery are increased ; an increased speed of recovery is certain. Further the soldier will see the system working for himself and his morale will be improved.

The quantitative reckoning will also be in favour of it. There should be a saving of about 950 personnel per Corps. There should also be a saving of 180 motor ambulances against an expenditure of forty light aircraft. Farther back, hospital ships and hospital trains, which lock up rolling stock, will be dispensed with against an expenditure of, say, 12 hospital aircraft per Corps to evacuate patients to base hospitals.

Experience has shown that under imperfect conditions the system has been practicable. Under properly organized conditions, it should be easy.

If the organization envisaged is to function at full efficiency, attention must be paid to the following points :—

(*a*) The proper design of light aircraft. They must be able to land upon and take off a rough strip as short as possible and not more than 200 yards long. They should carry as many casualties as possible. High speed and long range are neither so important as extreme manœuvrability.

(*b*) The proper design of hospital aircraft for operating in rear areas.

(*c*) A clear and simple division of responsibilities between the Army and the R.A.F. (See Part II).

(*d*) The siting of Medical Centres and hospitals close to airfields so as to reduce road journeys to a minimum.

(*e*) The provision of a wireless net for the efficient working of the system within the Corps.

PART II—THE SYSTEM FOR THE PROVISION OF REINFORCEMENTS

The system for the provision of reinforcements, like that for the evacuation of casualties, has undergone vast modification to meet the different theatres of war. In general, it may be said that if a reinforcement system functions efficiently, it must ensure that reinforcements arrive with their units fit, well trained and with high morale, and that the number of men tied up in the reinforcement system is reduced to a minimum.

The Present System

When our armies are engaged close to the United Kingdom, as has been the case in France, the two requirements mentioned above are not difficult to attain. But when they are fighting a long way from home—as is more often the case—then the problem for the provision of reinforcements is immeasurably greater. The soldier leaves by sea and, owing to the inevitable shortage of shipping in war time, spends some weeks herded into crowded troop decks. By the time he arrives, he is only half the man that he was when he started. He is less physically fit, he has forgotten some of his training, he has lost some of his kit. Owing to the inevitable conditions of sea travel, he is "browned off." So he has to go into a training camp to be re-trained. When he leaves this camp he moves forward by rail or by road. Again the journey will take days and sometimes weeks before he reaches a forward reinforcement holding unit. By the time he reaches this, he has suffered from the same damaging process that he underwent on his sea voyage. At the holding unit, a further period of waiting ensues during which he is put through more training chiefly to maintain, or regain, some measure of physical efficiency. Mental efficiency and morale cannot adequately be dealt with in temporary camps of this nature. Finally, if he has not contracted malaria en route, after many weeks he reaches his unit, the Commanding Officer of which justifiably complains that the reinforcements he is receiving are not fit to go into battle and blames the training units who provided them.

Commanding Officers are usually right as regards the state of their reinforcements, but are wrong in blaming the training units. It is not their fault, nor is the quality of the drafts faulty. The poor state in which reinforcements reach their units is primarily due to the system of transportation for getting them there. It is not adequately appreciated that from the moment the soldier is handed over to a transportation agency, he starts rapidly to deteriorate. He is in fact a greater burden to that transportation agency than anything else that they have to carry. No other class of goods has to be fed en route. The soldier is the Army's most perishable commodity, but he is seldom treated as such. The solution again lies in realizing this and moving the reinforcement as a perishable commodity should be moved, by air.

Movement by Air

Movement by air solves many difficulties. The soldier reaches his destination quickly, and therefore as fit and well trained as when he left. Feeding has only to be arranged at widely separated terminal points. The malaria problem disappears except at the terminal points where it is easily controlled. Through being flown,

it is brought home to the soldier that he is of importance to his country. Therefore, his morale tends to improve rather than deteriorate.

The qualitative arguments are once more overwhelmingly in support of movement by air. But before we go on to discuss the organization required, we have one important point to consider. Should the reinforcements be flown forward in the aircraft which bring casualties back, or should they be allotted special aircraft of their own? The Medical Services will argue that casualties should be allotted their own aircraft just as they are allotted their own ambulances. They will argue that they will fly forward medical stores, whole blood and other urgent medical requirements in the aircraft that would otherwise fly empty. They will say that, if the aircraft are employed for any purpose other than medical, they will lose control of them and many of their troubles re-appear. They will quote the Geneva Convention which forbids the use of Red Cross marking except for medical purposes and which forbids the removal of Red Cross markings, so that vehicles and ships intended for casualties cannot be used for other purposes.

But, if these arguments are accepted, it will mean that the aircraft are not used at full efficiency, since medical supplies required forward cannot fill the returning casualty aircraft to capacity. Again, the arguments about the Geneva Convention are not very convincing. Red Cross markings have often failed to protect casualties under all kinds of different conditions. It is clear that enemy fighters of the future, travelling at 500 miles per hour, will have insufficient time to see Red Cross markings upon small targets like light aircraft. Is it not, therefore, reasonable to face these facts, and to accept that casualties may be evacuated in aircraft without any protective markings? They have often had to be evacuated in unmarked vehicles in the past. There is little reason why it should not be done in the future. If this is accepted, then the aircraft can be used for other purposes and their flexibility and carrying capacity exploited to the full. As the number of reinforcements to be flown forward only exceeds the number of casualties by the amount of the killed and missing, and as reinforcements are always required for the same units as suffered the casualties, it is submitted that the normal load for returning casualty aircraft should be reinforcements. We wish particularly to emphasize the word "normal." Forward troops will, of course, be sent up whatever they most require. At times this may be supplies or ammunition or even engineer stores, rather than reinforcements. But if these things can be got forward in time by surface routes they should so be moved, leaving the aircraft for that perishable commodity, the reinforcement.

Suggested Organization

Let us therefore outline the organization required by a modern air reinforcement system. It is shown diagrammatically in Figure 2 superimposed upon our casualty organization as shown in Figure 1. Again a number of points require emphasizing:—

(*a*) The R.A.F. will be responsible for the provision, maintenance and operation of all aircraft in accordance with demands from the Army.

(*b*) The Army will provide all ground personnel for loading and unloading of casualties, stores and personnel of all kinds, and their transport to and from hospitals and reinforcements camps. The R.A.F. will supply all flying crews, including a nurse or medical orderly for all hospital aircraft.

(*c*) The whole system will be directed by the "A" staff who also control the medical service. This should compensate the medical service for the loss of direct control of casualty evacuating aircraft and will mean that the R.A.F. have to deal with one branch of the staff only.

(*d*) The casualty and the reinforcement establishments will always be sited in close proximity to each other as well as close to airfields. This facilitates the transfer of cured patients from hospitals to reinforcement camps all down the chain. The medical organization will not be permitted to return any fit man direct to his unit. He must always go through the appropriate reinforcement channel.

(*e*) A small party of about one officer and two N.C.O's will be required at each forward airstrip to supervise the forward despatch of reinforcements to their units. They can be attached administratively to the forward airstrip medical detachments.

(*f*) It is not envisaged that any special wireless net will be required for the reinforcement system. There is not the same urgency. Normal staff signal channels should suffice.

This proposed system will show similar quantitative advantages to those already outlined for the evacuation of casualties. First and foremost, there will be a saving of man-power. When a theatre of war is far removed from home bases it has been customary to hold three months reinforcements at normal wastage rates with the army in the field. This is over-insurance. It is sometimes forgotten that this policy can only lead to the reinforcement taking three months to travel the reinforcement channel, and therefore three months in which to deteriorate before reaching his unit. The policy of holding three months reinforcements in the field, therefore, is the primary cause of reinforcements reaching their units in poor condition. The first object at which to aim must be to speed up the progress along the chain. By so doing we shall achieve two things : reinforcements will arrive in better condition, and the numbers held forward will be reduced.

Movement by air, which provides us with a quick, continuous and, if the need arises, flexible flow, is the finest instrument with which to achieve this aim. In our view, if reinforcements are flown all the way to the forward areas, it should be possible to reduce the forward holding to one month's wastage at normal rates. Further experience and efficient organization may enable us further to reduce the forward holding to fourteen days at normal wastage rates. Always the advantages of a reduction of forward holding are cumulative, the disadvantages imaginary. Three months' forward holding at the wastage rates assumed above amounts to 4,500 men per Corps of 57,500 men. If air movement enables us to reduce this to one month's holding, we shall save 3,000 deteriorating reinforcements, together with about 300 men necessary to administer them, *i.e.*, a saving of 3,300 men without any R.A.F. increase, since the air organization already exists for casualties.

Although the man-power saving is the main one, other effects must not be forgotten. The total man-power reduction in the forward areas of 4,250 out of 57,500 will reduce the supply tonnages required forward from 154 tons to 143 tons. This saving will, however, be more than offset by P.O.L. consumption which may be expected to increase from about six tons to nearer forty tons per Corps per day.

Part II—Summary

The effect of a change from the present system of surface supply of reinforcements to one of supply by air may now be summarized :—

(*a*) The additional speed which can be achieved and the continuous flow will enable the reinforcement to reach his unit in a much shorter time, and therefore in a better physical and training state and in a higher state of morale.

(*b*) The forward holding of reinforcements can be reduced from three months to one month or even less. This will speed up movement down the chain and save about 3,300 men.

(*c*) Problems of feeding and health en route are considerably simplified.

(*d*) Movement by air of casualties and reinforcements is controlled by the "A" staff, thus giving the R.A.F. one staff branch to deal with.

(*e*) There will be an increase in requirements of P.O.L. but a decrease in the maintenance tonnages required forward.

CONCLUSION

We come then to our final conclusion. The present surface systems of casualty evacuation and reinforcement procedure are out of date and inefficient in the light of recent advances in air transport. There is an overwhelming case that the R.A.F. should undertake to move all casualties by air from forward areas to base hospitals and beyond. Similarly, reinforcements should be flown up to their units in the returning casualty-carrying aircraft. By such methods additional lives will be saved, length of time in hospital reduced and reinforcements will reach their units in a better physical and trained condition. Morale all round will be improved. There will be a seven per cent. saving in man-power.

It is emphasized that a complete change of system is essential. Any compromise of half surface movement and half air movement will fail to reap the full benefits of air movement and will contain many of the disadvantages of both systems. It will fail to achieve the object in view.

Is it too much to hope that the introduction of the system outlined above, in which the Army and the R.A.F. help each other, will be the first step towards the introduction of one Medical Service common to the Army and the R.A.F ?

JAPAN AND THE JAPANESE

By H. Vere Redman

On Wednesday, 14th November, 1945.

Air Chief Marshal Sir Philip B. Joubert De La Ferté, K.C.B., C.M.G., D.S.O., in the Chair.

The Chairman: It is my pleasure to-day to introduce to you Mr. Redman. Mr. Redman has had very great experience of Japan; he has worked there, lived there and written there for a number of years. He came from Japan to Hong Kong and there began in embryo what is now known as the Far Eastern Bureau. He has been conducting psychological warfare against the Japanese for the past three years. From Hong Kong he moved to Singapore and then on to London, where he took on duties in the Ministry of Information in the Japanese Section. He was head of the Japanese Committee which dealt with all propaganda and propaganda themes for Japan. Therefore he can be surely classed as a person who knows and understands his subject.

LECTURE

THE seventy-four million Japanese, like the Germans, are on our hands. They are on our hands in a great many ways. As things are developing now, they seem to be on our hands actually in the physical sense. The latest reports are to the effect that unless very energetic measures are taken by the Supreme Command, a considerable number of Japanese are likely to starve before the Winter is out. But apart from the physical responsibilites we have towards the Japanese, as towards all conquered peoples, there is the more overriding political responsibility of ensuring by coercion, suggestion, and other methods at the disposal of occupying Powers, that Japan enters once again into the comity of nations and makes a useful subscription to world civilization.

We are thus faced with a pretty constant preoccupation with the Japanese, even now, when they are no longer a people to be defeated and therefore whose every mental process one wishes to study in order to be able more successfully and more rapidly to defeat them. It is still of considerable importance to know what their make-up is, what sort of people they are, and what are the possibilities of a reasonably rapid modification of their way of life to fit into our conception of the pattern of the post-war world. What I want to talk about this afternoon is roughly what the Japanese are like, or what they *were* like at the time they came into the war and during the period when they were waging war, with some glancing references to those changes which we know to have occurred since defeat.

The Japanese Environment

I suppose the first thing one would say about the Japanese is the first thing one would say about anybody, that they are creatures of their environment. As you know, the Japanese islands comprise roughly 150,000 square miles, of which about one-sixth is fit for cultivation; and in the days of the most advanced agriculture in Japan, nearly sixteen per cent. was actually cultivated. Thus Japanese agrarian economy was always a scratching, scraping business. Those of you who have been in Japan will, I am sure, have been struck by that. The first impression, as one travels about the country, is of the elaborate care with which every field has been cultivated to its utmost capacity. One of the most noticeable things is the slope of rice fields up the hill so that there is always, as it were, an angle at the corner of the field where the soil joins the rock.

It needs no great imagination to see the inevitable effect of such an economy on national character. It makes for toughness and for a realization that the rewards of labour come only after the greatest effort. That is undoubtedly a basic part of Japanese character. It is outstanding, of course, among the peasants, but it is a characteristic which one would notice throughout the whole nation in varying degrees.

Another important feature of Japan's environment is that of earthquakes. The seismograph registers about three shocks every day, but these of course are not of a very noticeable character. It is estimated that every two weeks you get a shock which would disturb the contents of a room, knock ornaments from the mantelpiece and shake the lights heavily, whereas once every eight months you get the sort of shock that would destroy crops in a fairly widespread area or have the effect on a town equivalent to that of a minor blitz. Once every sixty years, you get gigantic shocks such as the great earthquake of 1923 in which virtually the whole of Yokohama and a very large part of Tokyo were destroyed. The constant threat of earthquakes has an effect on character which it is not difficult to imagine. The life of the people is dominated by the knowledge that at any time the fruits of their labour may be brought to nothing and their homes may be destroyed. That knowledge reveals itself strikingly in the national attitude towards architecture. It has often been pointed out to me by Japanese architects that when a European is considering the plans of a house he asks himself: " How will this house stand ? " whereas the Japanese considering the construction of a house asks himself: " How will this house fall ? " It is a different attitude towards construction and a different attitude towards the fruits of labour. We see in the Japanese, very largely as the result of earthquakes, a tendency towards resignation to disaster and towards resilience in the face of it. Even in my own short experience of sixteen years in Japan, over and over again I have seen people who have lost their homes and their whole harvest for that year as the result of earthquake and attendant flood get to work almost within twenty-four hours to reconstruct their lives, and without any sense of being engaged in an unnatural or even unexpected operation.

One could go on to say a good deal more about the effects of natural environment, but I think those two examples will be sufficient for the moment. We see toughness, frugality and a conviction of the naturalness of hard work developed by the rather grim agrarian economy of Japan. We see developed by the earthquake discipline, resignation in the face of disaster and resilience in dealing with it. Whatever else we may have changed in Japan by defeating the Japanese Army, we cannot very well change the natural environment. Those things will remain very much as they are, and the resultant effect on the character must be to some extent the same. What we can say about it is that, generally speaking, in the interest of what we would wish to promote in Japan, these environmental characteristics are assets ; they will tend to aid Japan to turn into the sort of nation living the sort of national life which will fit in with our conception of the world pattern.

There is one possible exception—the tendency towards fatalism. The fatalism induced as the result of the earthquake discipline is already showing itself in a manner which is causing considerable anxiety among officers of the Supreme Command. I am sure you will have noticed yourselves constant newspaper reports of an absence of effort on the part of the Japanese to-day to do almost anything to help themselves. They have had such a long and grim training in resignation to disaster that now this major political and resultant economic disaster has come upon them they show a tendency " to lie down under it." My own surmise would be that this is only because the traditional resilience has not yet had time to come

into play. One feels that, as they have in the past been able to face up to the natural disasters with which they have been constantly afflicted, so they will ultimately be able to face up to their present plight.

Living Conditions

I should think the next most important influence on the Japanese character is that exercised by the domestic pattern. Apart from members of the very high income groups, it is true to say that the large majority of the Japanese live within eyeshot, earshot and nose-shot of their neighbours. In Japanese towns, and even in rural agglomerations, the herding together of houses is one of the most outstanding characteristics of the landscape. Then again, the house itself is built of wood, and one wall of it is perpetually open for the greater part of the year. Inside the house, the functional divisions such as we know them—a specific bedroom for sleeping, a specific dining room for eating, a specific sitting room for sitting—have no validity at all in the large majority of cases. Functionalization of rooms is a process of adaptation: moving mattresses off the floors and pushing them into cupboards, bringing out tables and putting round cushions for the dining room, or taking the table away and simply sitting on the cushions for the sitting room. The privacy of individual members of families is relatively unknown. Among the more well-to-do, "father" may be able to set aside a sort of Occidental box built on to the family Japanese house for his private study; but in the ordinary way all the activities of a family—the reading here, the listening to the radio there, the playing of children somewhere else—all take place in common. Thus, the whole pattern of Japanese life is of intense propinquity as between neighbour and neighbour.

The result of this propinquity is a highly developed social sense at the expense of considerable repression. The Japanese is always, as it were, getting out of somebody's way. If you tread on the foot of a Japanese in a bus or a tram, as likely as not he will apologize for having it there. He is, indeed, the most disciplined and most social animal inside his own Japanese "cadre." About that there is no doubt, and I suppose from a social point of view that is a very desirable attribute. But of course it is not achieved and has not been achieved except at the expense of immense repressions. An average Japanese, living the average Japanese herd life, is one of the most repressed creatures you can imagine, and you have only to look at him to see that. The result is that immediately he gets out of his own herd the things happen that those of us who lived in China, or any of the other countries which have been unfortunate enough to be overrun by the Japanese, know too well about. You have this paradox that, whereas at home the Japanese is one of the most social animals, perpetually repressing himself and thinking of the convenience of his neighbour, outside that Japanese herd he is the most aggressive and self-assertive creature you could possibly imagine.

Now the opportunity for the expression of his personality in national terms in other peoples' countries has gone. What your Japanese is left with is his own Japanese style of sociability and social discipline with no outlet for his individual assertiveness. Quite frankly, that is a problem. It may well be, of course, that the Supreme Command can train the Japanese to direct his individual assertiveness in such a way that it serves community life. But so far there is a gap.

Law and Customs

Before turning to the subject of law I think I should say a little about Japanese social customs. The most representative group of such customs is that known as

the family system. The Japanese family system is based on a very rigid hierarchy. The head of the family is an absolute monarch and there is a very clearly marked gradation, first son, second son, third son, and of course the wife after the male children and daughters after that. As far as women are concerned, the system is based on the three obediences: obedience to the parents before marriage, obedience to the husband after marriage, and obedience to the eldest son as a mother.

The position of women in Japan, although derived from Chinese custom, has nevertheless in its development been much less open to the growing ideas of sex equality in the Western World. Women in Japan had, and for that matter still have, virtually no rights at all. When the woman comes into her husband's family, she accepts the fact that her sole function is to produce male children and that, if she fails to perform that function, she can be dismissed from the office of wife. I am not suggesting, of course, that every Japanese husband would take advantage of what is still the legal position, that failure to produce a male child is a legitimate ground for divorce. There is many a kindly-disposed husband who, if his wife fails to produce a male child, would go and have the child by some other woman and then bring it back and say to his legal wife: "Now this is your child. Think yourself lucky you did not have to produce him yourself. Your duty under Japanese custom and law is to rear him as your own." But the position remains that failure to produce a male child is legal ground for divorce. Women in Japan recognize that situation, and it must be said that they have not been over-critical of it or led any very powerful movements in order to change it.

It may be said that the general effect of the family system on Japanese character—both of men and women—is to give a tremendous sense of a fixed order of society, of a clearly defined hierarchy as between men and men and then between men and women, the superiority of men never being open to question for one moment. Now that position seems likely to be changed. Already, within the programme of producing in Japan "conditions favourable to democracy," there are preparations for women's greater participation in political affairs and their acquirement of individual rights. No legal enactments to this effect have yet been made, but they are under preparation. The rigid order of the family system will to some extent be destroyed as a result of deliberate action by the Supreme Command. It remains to be seen to what extent its resultant effects on the national character will be modified.

The Japanese are also creatures of their law. Their law is conceived as a protection of the vast body of custom, as exemplified by the family system, within the framework of the all-powerful State. The Japanese conception of the State—in a way very similar to, although in no sense an imitation of, the German conception—is of an all-powerful body serving ends in themselves good regardless of the well-being of the constituent individuals. Law, then, in its turn, simply serves the purposes of this all-powerful body. There is no conception of a natural law which is above the State-devised and State-imposed law. Probably that is what most strongly differentiates Japanese legal philosophy, if not Japanese law, from our own. In the history of Japan there has never been a conception of a hero or right-minded person whose views, whose convictions, whose conscientious feelings differed from the established law and constituted custom of the community. If one were asked to put into one sentence what it is necessary for the Japanese to do in order to reconstitute their society so as to live with the freedom and tolerance of our Western European communities, the answer probably would be: "to see

to it, on the one hand, that law, statute law, mechanical law, is in the closest relationship to the development of the general social conscience, but on the other, that it is generally realized that there are certain concepts of conscience which law has no right to interfere with."

Religion

Next we have to see the extent to which the Japanese are the products of their religion. Broadly speaking, Japan has two real religions and one artificial one. The oldest real religion is what is known as Cult Shinto, which has some seventeen million adherents. It is a primitive form of nature and ancestor worship—a completely primitive animism with no particularly outstanding characteristics; "The Golden Bough" is just full of Shintos. There is nothing extraordinary about it except the fact that it has survived into the Twentieth Century as the religion of an otherwise apparently highly developed people. But the main religion in Japan, and the one which has had the most generally civilizing influence, is Buddhism, of which there are probably in the various sects about forty-three million adherents. For the rest, there is a very small number of Christians. Christianity has had a very considerable social influence in Japan; it has played its part in education, in the foundation of hospitals and that sort of work, but as a religious influence it must be conceded to have been quite small in terms of actual converts.

We come last of all to the artificial religion, the thing called State Shinto. To get a conception of State Shinto one has to go back to Cult Shinto, which is, as I say, a primitive animism: the sun gives us light and therefore must be worshipped and glorified; the wind may blow us away and therefore must be propitiated—ordinary animistic beliefs. But in terms of State Shinto the sun is not only the power which brings heat and light but also, in the person of the Sun Goddess, it created Japan, and the great-great-great grandson of the Sun Goddess was the first Emperor of Japan, Jimmu Tenno, who ascended the throne 660 years ago, and since then the Empire has been ruled in the direct line of that divine dynasty. We get, therefore, an association of political and religious power. As we have seen in the war itself and in the process of stoking up martial zeal which preceded it, this association of religious and political power has been extremely formidable. Of course, in the West too there have been constant attempts, for political purposes, to bring God and Cæsar together. In our own earlier history we had this close association in the idea represented by the slogan "for God and the King." But under the Japanese system of State Shinto not only are God and Cæsar on the same throne, not only are God and King brought close together, but God and King are actually combined in the same person. That is such a formidable politico-religious association as to cause a number of people to declare that before Japan is fit to become a member of the United Nations Organization and play her proper part in the post-war world it is absolutely essential for the Emperor, or at least for this particular politico-religious conception of the Emperor, to be got rid of completely. As you know, so far it has not been.

The arguments in favour of getting rid of the State Shinto conception of the Emperor and in favour of preserving it are so closely balanced that I should not myself like to assume the province of giving an opinion one way or another. I should like to point out, however, that already the Supreme Command has made an order for the disbanding of the State Shinto organization, the logical significance of which is that while the Emperor is being retained he is not being retained in precisely the same politico-religious position as that which he occupied at the time

of the Potsdam Declaration and at the time of the Japanese surrender. It may be possible to get rid of the State Shinto conception and at the same time preserve some of the traditional respect for the Emperor. That is what seems to be the method which is being adopted at the present time.

Before leaving this question, I should like to say one word about the effect on the Japanese of their religious beliefs. The effect of Buddhism is fairly clear. It exercises a predominantly civilizing influence; it teaches resignation; it teaches acceptance of authority in action while leaving the spirit free. Shinto, on the other hand, which in its cult form is a primitive tribal worship and in its elaborate State form is obviously outright worship of the State, develops the combative herd instincts to a degree unparalleled in any modern religions.

There does not seem to be much that can be done about changes in the religious outlook of the Japanese. It has never been seriously suggested by any student of the subject that any concentrated attempt should be made, for example, to introduce Christianity. Doubtless the ordinary missionary effort will go on as usual, but there seems very little likelihood of a nation-wide Christian effort. Buddhism itself is regarded as a satisfactory religion from the point of view of the United Nations, for fairly obvious reasons. The only step so far taken by the Supreme Command, and so far as we know ever planned, is that to get rid of State Shinto. For the rest, the hope seems to lie in the development, on the basis of existing beliefs, of moral and ethical standards acceptable to the rest of the world.

Conclusion

Recapitulating what I have said, I would give the outstanding Japanese characteristics as something like this: tough, frugal and resilient as a result of natural conditions; strongly developed socially within the herd, but most unsocial outside; loyal, cohesive, and with a strong sense of hierarchy as a result of the family system; combative, herd-conscious and State-worshipful as a result of Shinto in all its various forms; resigned to authority and catastrophe as a result of Buddhism. That, roughly, is what the Japanese make-up is like and how the problem which faces us in bringing them into the comity of nations presents itself.

Before I sit down and address myself to specific questions I should like to say just this one thing. Although the whole of this process of bringing Japan into a pattern of life which is altogether unfamiliar to her would seem to be difficult, I do feel very strongly myself that it can be done. I do not think I have any illusions about the Japanese. I think I have seen them at their worst. I was in Manchuria on 18th September, 1931. I was in Tokyo at the time of the military rebellion on 26th February, 1936. I was in North China at the time of the Japanese attack on Peking. I was in Nanking in January, 1937, just after the most dreadful act of Japanese atrocity of the whole Chinese campaign, the rape of Nanking. I have seen Japanese carpet-baggers and *shina-ronins*, as they are called, on the Continent, the dope pedlars, the secret police and the gendarmerie at their various actions; and my last eight months in Japan were spent in gaol in the hands of the gendarmerie, the Japanese equivalent of the Gestapo. So I always feel that I have seen the Japanese pretty well at their worst. Yet I have never lost the very firm belief that if it is possible to discipline them in a way of life nearer our own, if it is possible to get to them conceptions of universal standards of right and wrong as apart from national standards of right and wrong, then with their social urbanity, their love

of beauty, their courage and their industry, they will have a very important contribution to make to world civilization within a measurable period of years.

DISCUSSION

AIR CHIEF MARSHAL SIR ROBERT BROOKE-POPHAM (Chairman of the Council): Does the average Japanese believe in a heaven or a hell?

THE LECTURER: The Buddhist believes in both in the sense defined by the doctrines of reincarnation. The Shintoist believes in a heaven, yes, but hardly in any positive conception of hell.

CAPTAIN E. ALTHAM, R.N.: I wonder if the Lecturer could give us some idea of what in his view was the inspiration, if I may so put it, of the fighting Services of Japan. We speak of our own fellows fighting for love of country, or to defend their country, or for justice and freedom and suchlike motives. What really inspires the vast bulk of the Japanese fighting men? Is it Shintoism? Is it some form of fatalism which seems to produce fanaticism in a very marked degree? If so, did those influences and motives inspire them quite to the same extent towards the latter part of their fighting as perhaps they did in the earlier days; or was the Japanese soldier and sailor, towards the end, beginning to think a bit more for himself and a bit more about himself?

THE LECTURER: First of all, what is the inspiration? If you asked a Japanese that point-blank, he would have said to you immediately: "For the glory of the Emperor." You would then ask, "What the devil does that mean?" and mostly you would have to answer the question yourself because he could not give the answer.

What did he mean when he spoke about the glory of the Emperor? He meant, "for the greater honour of Japan as a nation," and that seemed to him something worth fighting for and worth dying for, and all the examples of ancient loyalties reinforce that doctrine. That there would be some religious compensation for effort I do not think ever very seriously entered his head.

Broadly speaking, I should say that the inspiration was a belief that the nation, as represented, as crystallized in the Emperor, would have its glory promoted by the efforts that he, the individual Japanese, made in fighting the enemies of his country. I think it was about as simple as that. Was he tending towards the end to do it less, to be less fanatical than at the beginning? I am sure my Chairman could answer that better than I could.

THE CHAIRMAN: There was no indication of a big breakdown in that respect. Even in the most awful conditions of starvation and disease the majority of them still hung on.

CAPTAIN E. ALTHAM, R.N.: I am still pondering over what you have just said. At the very end, what were his motives for fighting? Was it discipline, Shintoism, love of country, belief in Empire? I suppose it is impossible to say.

THE LECTURER: In terms of the individual I think the motivation was clear. If a man gives his life for his country there is nothing more to be done. When the Japanese goes off to the front he says: "I am not coming back." Behind this was clearly the assumption that provided he gets killed, he is morally all right. If he gives his life for his country he is doing the most a man can do. That very simple belief, I think, was enough to keep the soldier fighting to the end.

CAPTAIN E ALTHAM, R N: One could almost summarize it by saying that the height of his ambition is to give his life?

THE LECTURER: Yes, and that is true. I could name thirty or forty personal friends of whom I know it is true. Idiotic as it may seem, it is true.

CAPTAIN D. N. C. TUFNELL, D.S.C., R.N.: I should like to give an illustration of that sort of thing, with reference to Japanese giving their lives and whether they should have done or whether they should not have done so.

Some American airmen who came down in the Philippines landed, luckily for them,

in Philippino guerrilla territory where they continued to fight until the American troops arrived from their landing in Lingayan Gulf. Other airmen, less fortunate, did not come down in guerrilla territory; they came down in Japanese territory. The airmen who came down in Japanese territory of course got tortured and had their heads cut off. This was known to fellows whom I heard giving an official account of their experiences to the Commander-in-Chief, Pacific, when they arrived back in Honolulu. But they said—the guerrillas brought this back—that the Japanese did exactly the same with their own airmen who came down in their territory; they tortured them and cut their heads off, or made them commit hara-kiri, because they should not have come back alive; in other words, they baled out when they should not have baled out. On account of this, they took their parachutes away from them so that they could not bale out.

That is just one of the small indications. You can go on *ad infinitum* about the *kamikaze* fellows who destroyed their own aircraft at Okinawa and at other times and places. I consider it was rather like the Lord's Prayer: they had done those things which they ought not to have done—in other words, come back alive; and had left undone those things which they ought to have done—killed themselves. That has gone on all the way through.

A LADY VISITOR: In view of the fact that so many of them are Buddhists, have they ever been able to explain their actions, because Buddhism is surely a very fine religion?

THE LECTURER: I suppose that in this respect they are in the same position as Christians in similar circumstances.

THE LADY VISITOR: But they did it to their own people.

THE CHAIRMAN: There is the difference between a religious code and a military code. I think you can take it there is a distinction in the Japanese mind between any religious code such as Buddhism and a military code that he observes in accordance with military discipline. The orders are that you give your life and do not come back, and if you come back having failed you pay the penalty. That is the military code, and nothing whatever to do with their religion.

COLONEL G. R. PRIDHAM: Do you approve of the Japanese being allowed to migrate into any other country after this war?

THE LECTURER: I, personally? I do not know. Have I to answer that?

THE CHAIRMAN: It is a difficult question. I think you can say that those who have migrated in the past have proved themselves very good citizens.

THE LECTURER: On the whole, that is true.

THE CHAIRMAN: The Japanese domiciled in America who fought on the American side formed some of the best of the Intelligence Corps. Perhaps we can get round the question that way.

COLONEL G. R. PRIDHAM: I wonder what the Australians would have to say about that?

THE CHAIRMAN: Their policy is very clear. The White Australia policy has been laid down and there is no sign of it being altered.

THE CHAIRMAN

It remains for me to thank the Lecturer for giving what I knew he was going to give us, a clear, logical exposition of his case. I am afraid that in our hearts we feel it is going to be a very difficult job to get the Japanese to join the comity of nations. I do not know whether he would agree, but I think it is a tough job.

AIR CHIEF MARSHAL SIR ROBERT BROOKE-POPHAM (Chairman of the Council): Before we go I am sure you would like me to express our appreciation to Air Chief Marshal Sir Philip Joubert for kindly taking the Chair this afternoon.

The votes of thanks to the Lecturer and Chairman were carried by acclamation.

INTERNATIONAL SITUATION

THE SECURITY COUNCIL

THE General Assembly of the United Nations Organization (U.N.O.)—the successor to the ill-fated League of Nations—met for the first time on 10th January, 1946. It was housed in the Central Hall, Westminster.

After preliminary business had been attended to, the Assembly proceeded at once to one of its most important tasks—the Constitution of the Security Council in accordance with the Dumbarton Oaks Charter, Chapter V, Article 23.[1]

The basis of this Council is provided by the permanent membership of the five Allied Powers—Britain, the United States, Russia, China and France. To these have been added six non-permanent members—Brazil and Mexico (representative of the two halves of the Western Hemisphere); the Netherlands (Western Europe); Poland (Eastern Europe); Egypt (Middle East); Australia (South-West Pacific and South-East Asia).

The first meeting of the Security Council was held at the Church House, Westminster on 17th January.

Mr. Makin, the Australian Minister for the Navy and Munitions, became the first President. He holds office for a month and is relieved by each member in turn in alphabetical order of the countries they represent.

Acknowledging his election, Mr. Makin said the guiding principles laid down in the Charter were:—

1. The sovereign equality of all members.

2. The undertaking to fulfil in good faith the obligations which members assumed to ensure to all members the rights and benefits resulting from membership.

3. The undertaking to settle international disputes by peaceful means in such a manner that international peace and security and justice were not endangered.

4. The undertaking to refrain in international relations from the threat or use of force against the territorial integrity or political independence of any State, or to use force in any other manner inconsistent with the purposes of the United Nations.

5. The undertaking to give the United Nations every assistance in any action which takes place in accordance with the Charter, and to refrain from giving assistance to any State against which the United Nations were taking preventive or enforcement action.

He called special attention to the need for negotiation of special security agreements, so that the Council might have available at its call as soon as possible the armed forces, assistance and facilities necessary to maintain peace.

For the conclusion of these agreements the advice and assistance of the Military Staff Committee would be necessary, and one of the first acts of the Council

[1] See Journal of August, 1945, page, 391.

would be to call the Committee into being and to direct it in the tasks it was to perform.

MILITARY STAFF COMMITTEE

The British permanent representatives of the Chiefs of Staff on the Military Staff Committee are Admiral Sir Henry R. Moore, Lieut.-General Sir Edwin L. Morris, and Air Chief Marshal Sir Guy Garrod.

U.S.A.'s CONTRIBUTION TO A SECURITY FORCE

A statement made from the War Department on 13th January referred to the hope of the U.S. Army that, by 1st July, there would be 1,550,000 men to cover the quota likely to be allotted to America in the United Nations' Security Force.

It is planned that 797,000 men will be overseas, and that America's occupation forces in Germany and Japan will in themselves constitute part of the Security Force.

The strength of the United States military organization will include also what is officially described as a "small strategic reserve." It will be made up of troops stationed in the United States but ready for quick deployment in an emergency.

RUSSIA'S ASPIRATIONS IN THE MIDDLE EAST

The first session of the United Nations Organization has served at least one good purpose: it has forced into the open Soviet Russia's aspirations in the Middle East. Nothing could have been more naive than the way in which, when Persia appealed to U.N.O. for support against the Soviet encroachment on her northernmost province of Azerbaijan, Moscow retaliated by demanding the "quick and unconditional" evacuation of British troops from Greece and the puppet Ukraine put up a similar demand for our withdrawal from Indonesia. That there is no comparison between the three complaints can be shown at once by simple statement of the facts:—

(1) Since September, 1944, Russia has brought heavy pressure to bear on Persia to obtain oil concessions. The Persian Government, with the support of Britain and the United States, refused to grant any concessions during the War. A political party—insignificant in numbers but bolstered up by Russia—known as the *Tuda* party, supported the Soviet political demands and proceeded to set up what was in effect a separatist government in Azerbaijan. Two battalions of Persian troops, sent by the central Government to restore order, were stopped by the Russian military authorities on the plea that they would constitute interference in the internal affairs of the country. Furthermore, the central Government was told that if Azerbaijan asked to be incorporated as a Soviet Republic, Russia could not refuse such a request.

(2) The British Foreign Secretary, Mr. Bevin, in his forthright refutation of the aspersions on the integrity of our intentions, made it clear that our troops were in Greece at the specific invitation of the Government of that country to ensure free elections taking place under Anglo-American supervision. We are there, he said, to prevent financial chaos and civil war.

(3) He also made it clear that, against our will, we are in Indonesia to liquidate the Japanese as part of the uncompleted Allied task in the Far East, and in loyalty to the Dutch.

After a number of contentious meetings, U.N.O. agreed to a Russo-Persian proposal that they should endeavour to settle their differences out of court, and Mr. Vyshinsky withdrew from what, it had been made obvious to him, was an untenable position in trying to make a case against British troops in Greece.

The Indonesian question was dealt with on 13th February when a resolution asserting that the situation constituted a threat to international peace and security and called for a commission of inquiry received only two votes—Russia and Poland. The Council decisively absolved British policy and the British troops of the aspersions cast upon them.

Mr. Bevin would have failed to uphold our prestige in the world had he not demanded a complete withdrawal by Russia and, in doing so, remarked on the Communist dead-set at Britain and the Empire which so curiously resembled the Soviet attitude in certain official utterances.

It was high time for a "show down." The War was fought to abolish Nazi and Fascist aggression once and for all, yet here was Soviet Russia, using political weapons, while there is a universal desire to avoid friction in international relations, to wedge her influence into the Middle East—not only in Persia—but via Greece and the Balkans towards the Bosphorus and the Dardanelles. The United Nations tribunal seems to have realised that this is aggression—naked and unashamed—and, as such, a menace to the peace of the world and therefore not to be tolerated.

GENERAL SERVICE NOTES

PAY AND PENSIONS

Improved pay, a simpler marriage allowance, and higher pensions and gratuities for ratings and other ranks of the Services were announced on 19th December, 1945, in a White Paper (Cmd. 6715, H.M. Stationery Office, 6d.). They are to come into force on 1st July, 1946, together with new rates for officers which are still under review. Space will not permit going into details here. A fairly full summary was published in *The Times* issue of 20th December, 1945.

IMPERIAL DEFENCE COLLEGE

It has been announced that the Imperial Defence College is to reopen in the Spring, with General Sir William Slim, G.B.E., K.C.B., D.S.O., M.C. as Commandant.

EMPIRE FORCE FOR JAPAN

The British Commonwealth Occupation Force (B.C.O.F.) detailed to take part in the occupation of Japan includes representatives from the United Kingdom, Australia, New Zealand and India. The Commander-in-Chief is Lieut.-General J. Northcott, an Australian.

The force comprises :—(*a*) Force and base troops drawn from each of the contributing countries ; (*b*) a land component organized as a corps of one British-Indian division and two independent brigade groups, one each from Australia and New Zealand ; (*c*) an air component comprising squadrons drawn from the R.A.F., R.A.A.F., R.N.Z.A.F., and R.I.A.F.

The Indian division is commanded by Major-General D. T. Cowan and includes the 5th Brigade of the 2nd British Division and the 268th Indian Brigade. The Australian group is under Brigadier R. H. Nimmo, and the New Zealand group under Brigadier K. L. Stewart. The air component is commanded by Air Vice-Marshal C. A. Bouchier, R.A.F.

The B.C.O.F. will be under the overall command of the Supreme Commander, General MacArthur ; but the Commonwealth C.-in-C. will be entirely responsible for maintenance and administration of his force and will also have direct access to General MacArthur on matters involving operational commitments.

The B.C.O.F. will be stationed in the Hiroshima prefecture, which includes Kure and Fukuyama.

CHICHELE PROFESSORSHIP OF THE HISTORY OF WAR.

Applications are invited for the above Professorship, the subject of which may include any aspects of war, and should reach the Registrar of the University not later than 13th April, 1946 (8 copies being sent). Stipend £1,350 per annum (plus children's allowances and subject to any further general revision of stipends undertaken). Residence required during six months in each academic year. Retiring age 65. Further particulars may be obtained from the Registrar, University Registry, Oxford.

NAVY NOTES

GREAT BRITAIN

H.M. The King

Captain (E) the Hon. D. C. Maxwell, C.B.E., R.N., has been appointed a Naval Aide-de-Camp to the King in place of Captain (E) G. H. H. Brown, R.N., on the latter officer's promotion.

Captain (E) (Acting Rear-Admiral (E)) C. Ellis, R.N., has been appointed a Naval Aide-de-Camp to the King in place of Captain (E) A. F. Dobbyn, R.N., placed on the Retired List.

Captain (S) C. A. Bowen, O.B.E., R.N., has been appointed a Naval Aide-de-Camp to the King from 18th October, 1945, in place of Captain (S) A. G. Bath, O.B.E., R.N., placed on the Retired List.

Captain (Acting Commodore second class) J. C. K. Dowding, C.B.E., D.S.O., R.D., R.N.R., has been appointed a Royal Naval Reserve Aide-de-Camp to the King from 1st September, 1945, in succession to Captain A. V. Radcliffe, R.D., R.N.R.

The Rev. R. E. Gick, B.A., R.N., has been appointed Honorary Chaplain to the King, in succession to the Rev. R. R. Churchill, C.B.E., M.A., R.N.

Board of Admiralty

Second Sea Lord.—The King has approved the appointment of Vice-Admiral Sir Arthur J. Power, K.C.B., C.V.O., to be a Lord Commissioner of the Admiralty and Chief of Naval Personnel (Second Sea Lord), in succession to Admiral Sir Algernon U. Willis, K.C.B., K.B.E., D.S.O., to take effect in February, 1946.

Fourth Sea Lord.—The King has approved the appointment of Vice-Admiral D. B. Fisher, C.B., C.B.E., to be a Lord Commissioner of the Admiralty and Fourth Sea Lord, in succession to Vice-Admiral Sir Arthur F. E. Palliser, K.C.B., D.S.O., to date early January, 1946.

Flag Appointments

Home Fleet.—At Portsmouth on 24th November, Vice-Admiral Sir E. Neville Syfret, K.C.B., K.B.E., hoisted his flag in H.M.S. " Nelson " as Commander-in-Chief, Home Fleet, in succession to Admiral Sir Henry R. Moore, G.C.B., C.V.O., D.S.O.

Washington.—Admiral Sir Henry R. Moore in December took up the appointment of Head of the British Admiralty Delegation in Washington, in succession to Admiral of the Fleet Sir James F. Somerville, G.C.B., G.B.E., D.S.O.

Plymouth.—Admiral Sir Henry D. Pridham-Wippell, K.C.B., C.V.O., on 27th November, took up the appointment of Commander-in-Chief, Plymouth, and hoisted his flag in H.M.S. " Renown."

East Indies.—The King has approved the appointment of Vice-Admiral Sir Arthur F. R. Palliser, K.C.B., D.S.O., to be Commander-in-Chief, East Indies Station, to date about mid-February.

British Pacific Fleet.—Vice-Admiral Sir Philip L. Vian, K.C.B., K.B.E., D.S.O., Commanding the First Aircraft-Carrier Squadron, has been appointed Second-in-Command, British Pacific Fleet, in succession to Admiral Sir H. Bernard Rawlings, K.C.B., K.B.E., to date 27th October.

The following appointments were announced on 15th December, 1945 :—

Rear-Admiral H. R. G. Kinahan, C.B., C.B.E., to be Rear-Admiral Commanding 15th Cruiser Squadron, in succession to Commodore M. J. Mansergh, C.B., C.B.E.

Rear-Admiral R. S. G. Nicholson, D.S.O., D.S.C., to be Admiral Superintendent, H.M. Dockyard, Devonport, in succession to Vice-Admiral Sir Arthur N. Dowding, K.B.E., C.B., to date 18th December, 1945.

Rear-Admiral M. M. Denny, C.B., C.B.E., to be Assistant Chief of Naval Personnel and Director of Personal Services, in succession to Rear-Admiral H. R. G. Kinahan, C.B., C.B.E.

Rear-Admiral A. R. M. Bridge, C.B.E., to be Flag Officer Commanding Aircraft Carriers and Naval Air Stations, East Indies Station, in succession to Vice-Admiral Clement Moody, C.B.

BATH KING OF ARMS.—It was announced on 9th January that the King has appointed Admiral Sir Max Kennedy Horton, G.C.B., D.S.O., to be Bath King of Arms, in the room of General Sir Walter Pipon Braithwaite, G.C.B., deceased.

GOVERNOR OF TASMANIA.—Admiral Sir Hugh Binney, K.C.B., D.S.O., arrived at Hobart on Christmas Eve in the aircraft-carrier " Vindex " to take up his appointment as Governor of Tasmania in succession to Sir Ernest Clark, G.C.M.G., K.C.B., C.B.E.

GOVERNOR OF NEWFOUNDLAND.—Vice-Admiral Sir Humphrey Walwyn, who had been Governor of Newfoundland since 1936, left St. John's on 17th January on relinquishing his post.

ADMIRALTY APPOINTMENTS

It was announced in December that Captain D. M. Lees, R.N., would join the Admiralty on 12th February before succeeding Rear-Admiral C. H. L. Woodhouse as Director of Naval Ordnance on 27th February.

PROMOTIONS

NEW VICE-ADMIRALS.—It was announced on 22nd December that in consequence of the retirement of Vice-Admiral A. M. Peters at his own request, to facilitate the promotion of younger officers, the following promotions and retirements are approved :—

Rear-Admiral D. B. Fisher to be Vice-Admiral in H.M. Fleet, to date 20th December, 1945.

Rear-Admiral Oliver Bevir to be placed on the Retired List and promoted to Vice-Admiral (Retired) and reappointed as Senior Officer, Royal Naval Establishments, India, to serve in the rank of Rear-Admiral.

NEW REAR-ADMIRALS.—The following promotions to Rear-Admiral in H.M. Fleet have been announced by the Admiralty, to date from 2nd January, 1946 :—

Captain Alexander C. G. Madden, C.B.E., A.D.C.
Captain (Commodore 2nd Class) Marcel H. A. Kelsey, D.S.C., A.D.C.
Captain (Commodore 2nd Class) Richard V. Symonds-Tayler, D.S.C.
Captain Gerald M. B. Langley, O.B.E.
Captain (Acting Admiral) Lord Louis Mountbatten, G.C.V.O., K.C.B., D.S.O.

HALF-YEARLY LIST.—The following promotions have been made, to date 31st December, 1945 :—

COMMANDER TO CAPTAIN.—H. R. Graham, K. H. T. Peard, K. M. Walter, E. W. J. Bankes, H. N. S. Brown, J. S. S. Litchfield-Speer, L. G. Durlacher, C. F. J. L. Davies, A. St. Clair-Ford, G. K. Collett, D. C. Ingram, St. J. R. J. Tyrwhitt, T. A. K. Maunsell, D. G. F. W. Macintyre, R. T. White, J. E. H. McBeath.

LIEUTENANT-COMMANDER TO COMMANDER.—M. Thornton, G. D. Anderson, J. A. Elwin, N. E. G. Roper, F. J. Cartwright, J. S. H. Lawrence, R. B. N. Hicks, J. S. Milner, D. H. Elles, R. J. Cooper, D. R. H. Ferguson, H. C. O. Bull, I. F. M. Newnham, C. C. B. Mackenzie, G. Talbot-Smith, M. F. L. Beebee, W. Elliot, R. Bill, P. J. Cowell, G. G. Cowburn, V. A. Wight-Boycott, G. I. M. Balfour, A. D. Robin, A. J. T. Roe, M. R. G. Wingfield, D. H. F. Hetherington, A. H. C. Gordon-Lennox, F. M. A. Torrens-Spence, R. E. N. Kearney, K. C. Ogilvie, C. W. Malins, R. G. M. Collins.

Honours and Awards

The Victoria Cross

On 13th November, it was announced that the King had approved the award of the Victoria Cross for Valour to :—

Lieutenant Ian Edward Fraser, D.S.C., R.N.R.
Leading Seaman James Joseph Magennis.

Lieutenant Fraser commanded H.M. midget submarine XE-3 in a successful attack on the Japanese heavy cruiser " Takao " at her moorings in Johore Strait, Singapore, on 31st July, 1945. During the long approach XE-3 deliberately left the believed safe channel and entered mined waters to avoid suspected hydrophone posts. The target was aground, or nearly aground, both fore and aft, and only under the midship portion was there just sufficient water for XE-3 to place herself under the cruiser. For forty minutes she pushed her way along the sea bed until finally Lieutenant Fraser managed to force her right under the centre of the cruiser. Here he placed the limpets and dropped his main side charge. Great difficulty was experienced in extricating the craft after the attack had been completed, but finally XE-3 was got clear, and made her long return journey out to sea.

Leading Seaman Magennis served as diver in this attack. Because XE-3 was tightly jammed under the target the diver's hatch could not be fully opened, and Magennis had to squeeze himself through the narrow space available. He experienced great difficulty in placing his limpets on the bottom of the cruiser owing both to the foul state of the bottom and to the pronounced slope, upon which the limpets would not hold. Magennis, however, persisted until he had placed his full outfit before returning to the craft in an exhausted condition.

Shortly after withdrawing, Lieutenant Fraser endeavoured to jettison his limpet carriers, but one of these would not release itself and fall clear of the craft. Magennis, in spite of his exhaustion, his oxygen leak, and every probability of his being sighted, at once volunteered to leave the craft and free the carrier. After seven minutes of nerve-wracking work with a heavy spanner he succeeded in doing so. (See also Canada.)

K.C.B.—The following promotions in the Order of the Bath were made on 18th December for distinguished service throughout the War in Europe :—

Vice-Admiral William G. Tennant, C.B., C.B.E., M.V.O.
Rear-Admiral Thomas H. Troubridge, C.B., D.S.O.
Rear-Admiral Cecil H. J. Harcourt, C.B., C.B.E.

C.B.—The following appointments were made on 18th December for distinguished service throughout the War in Europe :—

Rear-Admiral J. W. Rivet-Carnac, C.B.E., D.S.C.
Rear-Admiral J. G. L. Dundas, C.B.E.
Rear-Admiral C. E. Douglas-Pennant, C.B.E., D.S.O., D.S.C.
Rear-Admiral A. G. Talbot, D.S.O.
Rear-Admiral E. D. B. McCarthy, D.S.O.
Engineer Rear-Admiral B. J. H. Wilkinson, C.B.E.
Rear-Admiral (E) C. W. S. Gibson.
Rear-Admiral (S) M. G. S. Cull, C.B.E., M.V.O.
Captain (acting Rear-Admiral) L. D. Mackintosh, D.S.O., D.S.C.
Captain I. A. P. Macintyre, C.B.E., D.S.O., R.N.
Surgeon Captain (acting Surgeon Rear-Admiral) C. E. Greeson.

K.B.E.—The following promotion to, and appointments as, K.B.E. were made on 18th December for distinguished service during the War in Europe :—

Admiral Sir Algernon U. Willis, K.C.B., D.S.O.
Vice-Admiral Sir E. Neville Syfret, K.C.B.
Rear-Admiral John A. V. Morse, C.B., C.B.E., D.S.O.

C.B.E.—A number of appointments as C.B.E. were made on 11th December for distinguished service during the War in Europe.

New Year Honours

The following were included in the New Year Honours conferred by the King :—

Viscount.—Admiral of the Fleet the Right Hon. Andrew Browne, Baron Cunningham of Hyndhope, K.T., G.C.B., D.S.O.

Barons.—Admiral of the Fleet Sir John Cronyn Tovey, G.C.B., K.B.E., D.S.O., First and Principal Naval A.D.C. to the King ; Admiral Sir Bruce Austin Fraser, G.C.B., K.B.E.

G.C.B.—Admiral Sir John H. D. Cunningham, K.C.B., M.V.O., Admiral Sir Henry R. Moore, K.C.B., C.V.O., D.S.O.

K.C.B.—Vice-Admiral Arthur M. Peters, C.B., D.S.C., Vice-Admiral Harold T. C. Walker, C.B., Vice-Admiral Clement Moody, C.B., Engineer Vice-Admiral John Kingcome, C.B.

C.B.—Rear-Admiral J. W. A. Waller, Rear-Admiral R. H. Portal, D.S.C., Rear-Admiral P. K. Kekewich (Retired), Rear-Admiral (E) J. L. Bedale, Rear-Admiral (E) B. W. Greathed, Rear-Admiral (S) N. Wright, O.B.E. (Retired), Rear-Admiral (S) R. A. Hawkesworth, O.B.E. (Retired), Surgeon Rear-Admiral A. E. Malone, Major-General R. A. D. Brooks, C.M.G., D.S.O., R.M., Commodore E. M. Evans-Lombe, Captain (acting Rear-Admiral) M. S. Slattery.

C.B. (Civil).—Rear-Admiral G. P. Thomson, C.B.E. (Retired), lately Chief Press Censor.

C.V.O.—Captain R. Oliver-Bellasis, R.N.

C.M.G.—Commander K. Cohen, R.N., attached to department, Foreign Office ; Engineer Rear-Admiral C. J. Limpenny (Retired), attached to department, Foreign Office.

G.B.E.—Admiral of the Fleet Sir James F. Somerville, G.C.B., K.B.E., D.S.O., Admiral Sir Charles E. Kennedy-Purvis, K.C.B., Vice-Admiral Sir Arthur J. Power, K.C.B., C.V.O.

K.B.E.—Admiral Marshal L. Clarke, C.B., D.S.C. (Retired), Vice-Admiral Arthur F. Pridham, C.B. (Retired), Vice-Admiral Douglas B. Fisher, C.B., C.B.E., Rear-Admiral Richard H. L. Bevan, C.B., D.S.O., M.V.O. (Retired), Engineer Rear-Admiral Henry W. Wildish, C.B., C.B.E. (Retired), Major-General Leslie C. Hollis, C.B., C.B.E., R.M., Surgeon Rear-Admiral Gordon Gordon-Taylor, C.B., O.B.E., Surgeon Rear-Admiral Richard A. Rowlands, O.B.E.

C.B.E.—Captain E. M. C. Barraclough, R.N., Captain (S) A. G. Bath, O.B.E., A.D.C., R.M., Captain F. R. Baxter, R.N. (Retired), Captain W. G. Beauchamp, V.D., R.N.V.R., Miss G. L. Bell, Superintendent, W.R.N.S., Mrs. Violent C. S. Boyd, Superintendent, W.R.N.S., Engineer Rear-Admiral F. H. Buckmaster (Retired), Captain E. F. Collingwood, R.N.V.R., Engineer Captain G. F. Croker, R.N. (Retired), Miss A. Curtis M.B.E., Superintendent, W.R.N.S., Captain G. A. S. M. de Wilton, R.N. (Retired), Captain H. Drew, D.S.C., R.N., Captain R. C. M. Duckworth, O.B.E., R.N., Captain R.S. Goff, D.S.O., R.N. (Retired), Captain M. G. Goodenough, D S.O., R.N., Captain G. Grantham, C.B , D.S.O., R.N., Captain (S) K. B. S. Greig, R.N. (Retired), Captain (S) E. D. Guinness, R.D., R.N.R., Captain (S) E. Haslehurst, R.N., Brigadier T. H. Jameson, D.S.O., O.B.E., R.M., Captain A. C. G. Madden, R.N., Constructor Captain A. J. Merrington, O.B.E., R.C.N.C., Engineer Captain H. Moy, O.B.E., R.N., Captain (E) R. G. Murray, R.N., Captain H. St. L. Nicolson, D.S.O., R.N., Engineer Captain A. H. Parry, R.N. (Retired), Captain N. A. Prichard, R.N., Captain (S) S. J. Read, R.D., R.N.R. (Retired), Surgeon Rear-Admiral C. F. O. Sankey, O.B.E., Brigadier P. R. Smith-Hill, R.M., Captain W. C. Tancred, R.N. (Retired), Captain H. A. Taylor, R.N. (Retired), Brigadier V. D. Thomas, O.B.E., R.M., Surgeon Rear-Admiral F. J. D. Twigg,

D.O.M.S., Instructor Captain W. G. West, O.B.E., R.N., Surgeon Rear-Admiral R. J. Willan, M.V.O., O.B.E.

D.S.O.—Captain A. D. Torlesse, R.N.

Retirements

On 19th November, the Admiralty announced the following retirements of Flag Officers since the end of hostilities :—

Admiral Sir Max K. Horton, G.C.B., D.S.O., at his own request, to facilitate the promotion of younger officers.

Vice-Admiral J. H. Godfrey, C.B., with the rank of Admiral, and reappointed in the rank of Vice-Admiral as Flag Officer Commanding the Royal Indian Navy.

Vice-Admiral Sir Henry H. Harwood, K.C.B., O.B.E., with the rank of Admiral. Medically unfit.

Vice-Admiral M. L. Clarke, C.B., D.S.C., with the rank of Admiral.

Personnel

Command Money for Commanders.—An Order in Council of 30th October, 1945, published in the *London Gazette* on 2nd November, recalls that by Order in Council of 25th April, 1941, sanction was given to the payment of command money and entertaining allowances at the daily rates of 5s. and 2s. 6d. respectively to Commanders appointed in command of R.N. air stations. The Admiralty are of opinion that in view of their responsibilities Commanders in command of other shore establishments should also receive command money and entertaining allowances. Payment is authorized to these officers of command money at the daily rate of 3s., and, at Admiralty discretion, entertaining allowance at the daily rate of 2s., with effect from 9th February, 1942.

Prize Money.—In reply to questions in the House of Commons on 19th December, Mr. Alexander, First Lord of the Admiralty, said : " It has been decided that prize money in respect of the proceeds derived from the sale of captured enemy merchant ships and cargoes which has traditionally been granted to the Navy shall again be granted, but it is the intention that a proportion of the proceeds should on this occasion be allocated for the benefit of Air Force personnel. It has been decided, however, that a grant of prize bounty shall not be made. In previous wars this grant has been paid to the officers and crews of such of his Majesty's ships as were actually present at the taking or destroying of any enemy warships, but in the Government's view such a grant is inappropriate under modern conditions of war, and should be regarded as obsolete. The Dominions Governments and the Government of India have concurred in principle in these decisions. So far as the United Kingdom forces are concerned, however, it is the Government's intention that this shall be the last occasion on which prize money will be paid."

Material

Strength.—In a written reply to a question in Parliament, the First Lord on 7th November said that the number of ships of the Royal Navy completed and afloat on 31st August was 484. The principal figures were :—

Battleships	...	...	15 (5 in unmaintained reserve).
Aircraft Carriers	...	...	13 (2 in reserve)
Escort Carriers	...	...	40 (2 ,, ,,)
Cruisers	...	...	47 (2 ,, ,,)
Destroyers	...	...	225 (18 ,, ,,)
Submarines	...	...	128

There were also two prize submarines and six allocated for disposal.

Of these ships, the following were on loan to other navies : one battleship, three cruisers, eight fleet destroyers, twenty escort destroyers, and fifteen submarines.

LAUNCHES.—H.M.S. " Tiger "—a light cruiser, was launched on 25th October from the Clydebank shipyard of John Brown and Co. H.M.S. " Blake," of the same class, was launched on 20th December from the Govan shipyard of the Fairfield Company. H.M.S. " Crown," a destroyer, was launched on 19th December from the Scotts shipyard at Greenock. The destroyer " Crossbow," launched at the Southampton shipyard of Messrs. John I. Thornycroft, Ltd., on 20th December, is the 100th destroyer built by that firm for the Royal and Dominion Navies.

NAVAL AIR BRANCH

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> "A tripartite Naval Commission was accordingly appointed to make recommendations to implement this decision and it has recently reported to the Governments of the three Powers. Its report is now under consideration by these Governments, but its recommendation on the allocation of the main units has been accepted and their division between the three Powers is now being made.
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	Britain	*U.S.A.*	*Russia*
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The cruiser for the United States is the 10,000 ton "Prinz Eugen"; that for Russia is the 6,000 ton "Nûrnberg."

The British Government has offered to transfer a number of German warships to France, and discussions are taking place between naval experts of the two countries.

D.O.M.S., Instructor Captain W. G. West, O.B.E., R.N., Surgeon Rear-Admiral R. J. Willan, M.V.O., O.B.E.

D.S.O.—Captain A. D. Torlesse, R.N.

Retirements

On 19th November, the Admiralty announced the following retirements of Flag Officers since the end of hostilities :—

Admiral Sir Max K. Horton, G.C.B., D.S.O., at his own request, to facilitate the promotion of younger officers.

Vice-Admiral J. H. Godfrey, C.B., with the rank of Admiral, and reappointed in the rank of Vice-Admiral as Flag Officer Commanding the Royal Indian Navy.

Vice-Admiral Sir Henry H. Harwood, K.C.B., O.B.E., with the rank of Admiral. Medically unfit.

Vice-Admiral M. L. Clarke, C.B., D.S.C., with the rank of Admiral.

Personnel

Command Money for Commanders.—An Order in Council of 30th October, 1945, published in the *London Gazette* on 2nd November, recalls that by Order in Council of 25th April, 1941, sanction was given to the payment of command money and entertaining allowances at the daily rates of 5s. and 2s. 6d. respectively to Commanders appointed in command of R.N. air stations. The Admiralty are of opinion that in view of their responsibilities Commanders in command of other shore establishments should also receive command money and entertaining allowances. Payment is authorized to these officers of command money at the daily rate of 3s., and, at Admiralty discretion, entertaining allowance at the daily rate of 2s., with effect from 9th February, 1942.

Prize Money.—In reply to questions in the House of Commons on 19th December, Mr. Alexander, First Lord of the Admiralty, said : " It has been decided that prize money in respect of the proceeds derived from the sale of captured enemy merchant ships and cargoes which has traditionally been granted to the Navy shall again be granted, but it is the intention that a proportion of the proceeds should on this occasion be allocated for the benefit of Air Force personnel. It has been decided, however, that a grant of prize bounty shall not be made. In previous wars this grant has been paid to the officers and crews of such of his Majesty's ships as were actually present at the taking or destroying of any enemy warships, but in the Government's view such a grant is inappropriate under modern conditions of war, and should be regarded as obsolete. The Dominions Governments and the Government of India have concurred in principle in these decisions. So far as the United Kingdom forces are concerned, however, it is the Government's intention that this shall be the last occasion on which prize money will be paid."

Material

Strength.—In a written reply to a question in Parliament, the First Lord on 7th November said that the number of ships of the Royal Navy completed and afloat on 31st August was 484. The principal figures were :—

Battleships	15	(5 in unmaintained reserve).
Aircraft Carriers	13	(2 in reserve)
Escort Carriers	40	(2 ,, ,,)
Cruisers	47	(2 ,, ,,)
Destroyers	225	(18 ,, ,,)
Submarines	128	

There were also two prize submarines and six allocated for disposal.

Of these ships, the following were on loan to other navies : one battleship, three cruisers, eight fleet destroyers, twenty escort destroyers, and fifteen submarines.

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JAPAN

According to Foreign Notes in the January number of *The Navy*, compiled by Mr. McMurtrie—editor of *Janes Fighting Ships*, the following facts are now known about some of the more important surviving units of the Japanese fleet :—

Battleships.—" Haruna," Hyuga " and " Ise " at Kure ; " Nagato " (wrecked) at Yokosuka.

Fleet Aircraft Carriers.—"Amagi" and "Aso" (both incomplete), and "Katuragi" (slightly damaged) at Kure ; and the "Ibuki" and "Karagi" (both incomplete), and " Junyo " (also known as the " Hayataka ")—slightly damaged at Sasebo.

Heavy Cruisers.—"Aoba" and "Tone" at Kure ; and the "Myoka" and "Takao" —both disabled, at Singapore.

Light Cruiser.—" Oyodo " at Kure.

There are also a considerable number of destroyers, submarines, obsolete warships, and auxiliaries distributed between Kure, Yokosuka, Sasebo and Maiduru. Kure was heavily bombed and the ships there are probably more or less badly damaged.

UNITED STATES

Atomic Bomb Tests Against Warships.—The Navy Department has made known that a series of tests of the effects of atomic bombs against warships will be carried out in the coming Spring and Summer. The first is due to take place in May near Biku atoll in the Marshalls area. A second is due to be made in July, and another in 1947.

The vessels to be used in these tests will include the battleships " New York," " Arkansas," " Pennsylvania," and " Nevada "; the carriers " Saratoga " and " Independence," and the heavy cruisers " Salt Lake City " and " Pensacola." Also on the list of ships are the German cruiser " Prinz Eugen," and the Japanese battleship " Nagato " and the cruiser " Sakawa." In all 97 ships will be used.

The tests will be under the direction of Vice-Admiral W. H. P. Blandy, and in a statement to the special Senate committee on atomic energy, he said that in the first test, four American battleships, two carriers, two cruisers, sixteen destroyers, five submarines, nineteen transports, and some landing craft and auxiliary vessels will be used, as well as some German and Japanese craft. For this test bombs will be dropped by an Army Air Force bomber, and will be timed to explode several hundred feet above the target ships. In the second test, in July, a bomb will be set to explode on the surface of the water. The third test will be made with a bomb timed to explode at some depth under water, but the technical difficulties involved will not permit it to take place this year.

New Construction.—The new fleet aircraft-carriers displace 45,000 tons ; have a length of 986 feet over all, and a beam of 137 feet ; and have accomodation for 137 aircraft. The armament is eighteen 5-in. guns of a new model, fifty-four calibres in length, and a large number of 40 mm. Bofors and 20 mm. Oerlikons. The " Medway " was completed in September ; the sister ships " Franklin D. Roosevelt " (launched in April, 1945) and " Coral Sea " are under construction.

It is reported that over a hundred of the new 2,400 ton destroyers of the " Gearing " class are to be completed.

Construction Cancelled.—The construction of three more 45,000 ton carriers ; two fleet carriers of the " Essex " class ; sixteen escort carriers of the " Commencement Bay " class ; the heavy cruiser " Northampton " and three others ; and ten light cruisers has been cancelled.

U.S. Fleet in the Mediterranean.—The Navy Department has announced that a force, to be known as the Twelfth Fleet, will be kept in the Mediterranean. It will be commanded by Admiral Henry K. Hewitt.

Six other fleets will be divided equally between the Atlantic and Pacific.

ARMY NOTES

His Majesty The King

The King and Queen were present at the Royal Regiment of Artillery Memorial Service which was held in St. Paul's Cathedral on 4th December.

The Princess Royal, Colonel-in-Chief, inspected the 1st Battalion, Canadian Scottish, on 4th December.

On 6th December she was present at a luncheon given by the Lord Mayor of London to detachments of the Canadian Scottish at the Mansion House. Subsequently, as Colonel-in-Chief, she made a presentation to the Canadian Scottish of an oil painting of the regimental mascot, a St. Bernard dog.

The Princess Royal, Colonel-in-Chief, visited the No. 3 Operators' Training Battalion, Royal Signals, at Whitby on 28th November. On 10th January, 1946, on behalf of the Officers of the Royal Signals, she made presentations to the officers of the Royal Canadian, Australian, New Zealand, South African and Indian Signal Corps.

The Princess Royal (Controller Commandant) attended an A.T.S. Conference at East and West District Headquarters in Leeds on 20th November. She visited an A.T.S. Transit Camp at Hull on 30th November. She attended Staff Conferences of the A.T.S. in London on 5th December and 9th January, and at York on 29th January.

The King has approved the following appointments :—

To be Aides-de-Camp to the King.—Colonel (temporary Major-General) E. G. W. W. Harrison, C.B., C.B.E., M.C. (8th September, 1945) ; Colonel (temporary Brigadier) F. S. Clover, C.B.E., A.M.I.Mech.E. (15th November, 1945).

To be Honorary Physician to the King.—Colonel A. H. Harty, C.I.E., Indian Medical Service (23rd August, 1945).

To be Honorary Surgeons to the King.—Colonel W. E. R. Dimond, C.I.E., O.B.E., Indian Medical Service (11th June, 1945) ; Major-General D. V. O'Malley, O.B.E., M.B., Indian Medical Service (19th June, 1945) ; Colonel R. N. Khosla, O.B.E., M.B., Indian Medical Service (12th July, 1945).

To be Colonels Commandant.—Of the Royal Army Medical Corps, Major-General Sir Percy S. Tomlinson, K.B.E., C.B., D.S.O., F.R.C.P., retired pay (27th August, 1945) ; of the Royal Indian Army Service Corps, Major-General G. W. Hodgen, C.B., O.B.E., I.A. (12th November, 1945) ; of the Royal Regiment of Indian Artillery, Major-General W. H. B. Mirrlees, C.B., D.S.O., M.C. and Colonel (Hon. Brigadier) A. J. T. Farfan, C.B., D.S.O., O.B.E. (5th December, 1945) ; of the Indian Army Service Corps, Major-General G. L. S. Hawkins, C.B., M.C., I.A. retired (17th December, 1945).

To be Regimental Colonels.—Of The North Staffordshire Regiment, Colonel (acting Major-General) W. D. Stamer, C.B.E., D.S.O., M.C. (14th September, 1945) ; of the 5th Royal Gurkha Rifles, Indian Army, Colonel (Hon. Brigadier), H. R. C. Lane, C.B., D.S.O., O.B.E., I.A. retired (9th December, 1945).

Honours and Awards

Victoria Cross

The King has approved the award of the Victoria Cross to—

(a) *Corporal J. B. Mackey*, 2/3rd Pioneer Battalion, Australian Military Forces (posthumous) for most conspicuous bravery in an attack at Tarakan (Netherlands East Indies) on 12th May, 1945.

(b) *Private L. T. Starcevich*, 2/43rd Infantry Battalion, Australian Military Forces —for most conspicuous gallantry and extreme devotion to duty during the capture of Beaufort, North Borneo, on 28th June, 1945.

(c) *Sergeant N. G. Leakey*, 1/6th The King's African Rifles (posthumous)—for superb courage and magnificent fighting spirit in Abyssinia on 19th May, 1941.

(d) *Private F. J. Partridge*, 8th Infantry Battalion, Australian Military Forces—for outstanding heroism and fortitude in New Guinea on 24th July, 1945.

GEORGE CROSS

The King has approved the award of the George Cross to *Sowar Ditto Ram*, The Central India Horse, Indian Army (posthumous)—for extreme bravery, inspiring soldierly comradeship and self-sacrifice in Italy on 23rd July, 1944.

The following awards were included in those announced on 13th December, 1945, in recognition of gallant and distinguished services in Italy :—

C.B.—Major-Generals (temporary) H. L. Birks, D.S.O., and A. C. Duff, O.B.E., M.C., and C. H. Geake, C.B.E., and M. W. M. MacLeod, C.B.E., D.S.O., and H. M. Whitty, O.B.E.; Major-General (acting) C. H. Boucher, C.B.E., D.S.O.; Brigadiers (temporary) B. T. Godfrey-Fausset, D.S.O., O.B.E., M.C. and G. F. H. Stayner, C.B.E.

The following awards were included in the New Year Honours List of 1st January, 1946 :—

To be Viscounts.—Field-Marshal Baron Alanbrooke, G.C.B., D.S.O., A.D.C. General; Field-Marshal the Hon. Sir Harold Alexander, G.C.B., C.S.I., D.S.O., M.C., A.D.C. General; Field-Marshal Sir Bernard Montgomery, G.C.B., D.S.O.

To be Baron.—Field-Marshal Sir Henry Maitland Wilson, G.C.B., G.B.E., D.S.O., A.D.C. General.

G.C.B.—General Sir Ronald Adam, Bt., K.C.B., D.S.O., O.B.E.; General Sir Bernard Paget, K.C.B., D.S.O., M.C.; General Sir Thomas Riddell-Webster, K.C.B., D.S.O.

G.B.E.—Lieut.-General Sir Alexander Hood, K.C.B., C.B.E., M.D., F.R.C.P., K.H.P.; Lieut.-General Sir Wilfred Lindsell, K.C.B., K.B.E., D.S.O., M.C.; General Sir William Slim, K.C.B., C.B.E., D.S.O., M.C.

K.C.B.—Lieut.-General Sir Archibald Nye, K.B.E., C.B., M.C.; General Sir Edward Quinan, K.C.I.E., C.B., D.S.O., O.B.E.

K.C.M.G.—Major-General C. McV. Gubbins, C.M.G., D.S.O., M.C.

K.C.I.E.—Major-General J. B Hance, C.I.E., O.B.E., M.D., Indian Medical Service; Major-General H. J. M. Cursetjee, C.S.I., D.S.O., K.H.S., Indian Medical Service; Major-General F. I. S. Tuker, C.B., D.S.O., O.B.E.

K.B.E.—Lieut.-General (temporary) F. A. M. Browning, C.B., D.S.O.; Major-General E. C. Gepp, C.B., D.S.O.; Major-General N. G. Holmes, C.B., C.B.E., M.C.; Lieut.-General (honorary) B. O. Hutchison; Major-General D. J. McMullen, C.B., C.B.E., D.S.O.; Major-General (temporary) W. H. Ogilvie, M.D., F.R.C.S.; Major-General (temporary) C. M. Page, C.B., D.S.O., M.S., F.R.C.S.; Major-General (temporary) A. W. Stott, F.R.C.P.; Major-General L. H. Williams, C.B., M.C.

D.B.E.—Chief Controller (temporary) L. V. L. E. Whateley, C.B.E., Auxiliary Territorial Service.

Knight Bachelor.—Major-General C. O. Harvey, C.B., C.V.O., C.B.E., M.C.

C.B.—Major-General A. B. Austin; Major-General (temporary) J. A. M. Bond, C.B.E., V.D.; Major-General (temporary) W. P. A. Bradshaw, D.S.O.; Major-General (temporary) W. J. Cawthorn, C.I.E., C.B.E.; Major-General (temporary) E. D. Fanshawe, C.B.E.; Brigadier (temporary) J. L. Fowle, C.I.E.; Major-General A. Galloway, C.B.E., D.S.O., M.C.; Brigadier (temporary) G. A. Kelly; Major-General (temporary) A. W. Lee, M.C.; Major-General (temporary) R. C. McCay, C.B.E., D.S.O.; Major-General D. C. Monro, C.B.E., M.B., F.R.C.S.; Major-General (temporary) A. J. K. Pigott,

C.B.E.; Major-General (temporary) J. T. W. Reeve, C.B.E., D.S.O.; Major-General (temporary) G. N. Russell, C.B.E.; Major-General R. G. Stanham; Major-General (temporary) D. Stuart, C.I.E., O.B.E.; Major-General (temporary) R. H. Studdert, D.S.O., M.C.; Major-General T. O. Thomson, C.B.E.; Major-General (acting) P. A. Ullman, O.B.E.; Major-General (temporary) C. B. Wainwright; Major-General (temporary) W. D. A. Williams, C.B.E., B.A.; Major-General (temporary) E. A. Woods, C.B.E., M.C.

The following were included among awards announced on 17th January in recognition of gallant and distinguished services in Burma :—

C.B.—Major-Generals O. L. Roberts, C.B.E., D.S.O. and G. W. Symes, M.C.; Brigadiers (temporary) W. F. Hasted, C.I.E., C.B.E., D.S.O., M.C. and J. S. Lethbridge, C.B.E., M.C.

Appointments

The following appointments have been announced :—

War Office.—Lieut.-General Sir John Swayne, K.C.B., C.B.E., is to succeed General Sir Ronald Adam, Bt., G.C.B., D.S.O., C.B.E. as Adjutant-General to the Forces next April.

Leiut.-General Sir Daril Watson, K.C.B., C.B.E., M.C., has succeeded General Sir Thomas Riddell-Webster, G.C.B., D.S.O., as Quartermaster-General.

Major-General F. E. W. Simpson, C.B., D.S.O. succeeded Lieut.-General Sir Archibald Nye, K.C.B., K.B.E., M.C., as Vice Chief of the Imperial General Staff on 1st February.

Major-General E. H. A. J. O'Donnell, C.B.E., has succeeded Major-General Lord Burnham as Director of Public Relations.

Appointments in England.—Lieut.-General Sir Oliver Leese, Bt., K.C.B., C.B.E., D.S.O., has been appointed G.O.C.-in-C., Eastern Command; and Lieut.-General Sir Brian Horrocks, K.B.E., C.B., D.S.O., M.C., as G.O.C.-in-C., Western Command.

Lieut.-General Sir Philip Christison, K.B.E., C.B., M.C., has been appointed G.O.C.-in-C., Northern Command, in succession to Lieut-General Sir Edwin Morris, K.C.B., O.B.E., M.C., appointed to the U.N.O. Military Staff.

Major-General W. J. Eldridge, C.B., C.B.E., D.S.O., M.C., has been appointed Director-General of Artillery to the Ministry of Supply.

Appointments in India.—The following appointments have been announced :—

Lieut.-General A. R. Godwin-Austen, C.B., O.B.E., M.C., as Principal Administrative Officer, India.

Lieut.-General G. N. Russell, C.B., C.B.E., as Quartermaster-General, India.

General Sir Richard O'Connor, K.C.B., D.S.O., M.C., as G.O.C.-in-C., North-Western Army.

Lieut.-General Sir Arthur Smith, K.B.E., C.B., D.S.O., M.C., as G.O.C.-in-C., Eastern Command.

Major-General F. I. S. Tuker, C.B., D.S.O., O.B.E., as Commander, Lucknow District.

Colonel (temporary Major-General) F. H. Skinner, C.I.E., O.B.E., I.A. as Commander, Nagpur District.

Promotions

The following promotions have been announced :—

Generals.—The following Lieut.-Generals to be General: Sir H. Colville B. Wemyss, K.C.B., K.B.E., D.S.O., M.C. (15th October, 1945).

Lieut.-Generals.—The following Major-Generals (temporary Lieut.-Generals) to be Lieut.-Generals: Sir John T. Crocker, K.B.E., C.B., D.S.O., M.C. (15th October,

1945, with seniority 3rd September, 1944); Sir Neil M. Ritchie, K.B.E., C.B., D.S.O., M.C. (30th October, 1945, with seniority 21st December, 1944); Sir Bernard C. Freyberg, V.C., K.C.B., K.B.E., C.M.G., D.S.O., LL.D. (28th November, 1945, with seniority 8th May, 1943).

The following Major-General to be acting Lieut.-General: A. Galloway, C.B.E., D.S.O., M.C. (17th December, 1945).

The following Colonel (temporary Major-General) to be acting Lieut.-General: J. C. D'Arcy, C.B.E., M.C. (6th November, 1945).

Major-Generals.—The following Colonels (temporary or acting Major-Generals) to be Major-Generals: K. B. McLean, C.B. (15th October, 1945, with seniority 26th December, 1943); C. B. Wainwright (20th October, 1945, with seniority 2nd January, 1944); J. C. A. Dowse, C.B.E., M.C., M.B., late R.A.M.C. (28th November, 1945); Sir Brian H. Robertson, Bt.,* K.C.V.O., C.B., C.B.E., D.S.O., M.C. (30th October, 1945, with seniority 17th November, 1941); G. Surtees, C.B., C.B.E., M.C. (18th November, 1945, with seniority 14th January, 1944); J. M. L. Grover, C.B., M.C. (28th November, 1945, with seniority 24th February, 1944); N. C. D. Brownjohn, C.B., O.B.E., M.C. (10th December, 1945, with seniority 17th April, 1944); M. S. Chilton, C.B., C.B.E. (12th December, 1945, with seniority 25th April, 1944).

The following Colonels (acting Major-Generals) to be temporary Major-Generals: G. C. Evans, C.B.E., D.S.O. (17th July, 1945); G. A. Pilleau, C.B.E., M.C. (5th November, 1945); C. A. L. Dunphie, C.B.E., D.S.O. (27th November, 1945); J. Walker, C.B.E., M.C., M.B. (12th December, 1945); E. L. Bols, D.S.O. (8th December, 1945).

The following Colonels (including temporary Brigadiers) to be acting Major-Generals: G. W. Palmer, C.B.E. (1st September, 1945); J. C. O. Marriott, C.V.O., D.S.O., M.C. (15th October, 1945); C. Campbell, A.M.I.Mech.E. (1st September, 1945); G. L. Watkinson (11th October, 1945); L. C. Manners-Smith, C.B.E. (1st January, 1946).

The following Lieut.-Colonels (temporary Brigadiers) to be acting Major-Generals: C. E. Pert, D.S.O. (31st May, 1945); E. H. A. J. O'Donnell, C.B.E. (5th November, 1945); F. R. G. Matthews (6th November, 1945).

Retirements

The following General Officers have retired: General Sir Frederick Pile, Bt., G.C.B., D.S.O., M.C. (26th November, 1945); Lieut.-General Sir George Holmes, K.B.E., C.B., D.S.O. (28th November, 1945); Major-General B. O. Hutchison, C.B., C.B.E. (with honorary rank of Lieut.-General; 10th December, 1945); Major-General Sir James Drew, K.B.E., C.B., D.S.O., M.C. (27th December, 1945); Lieut.-General Sir Wilfrid Lindsell, K.C.B., K.B.E., D.S.O., M.C. (29th December, 1945); Major-General H. B. W. Hughes, C.B., D.S.O., O.B.E. (14th January, 1946); Major-General J. E. Utterson-Kelso, C.B., D.S.O., O.B.E., M.C. (16th January, 1946).

General

The Fourteenth Army.—The Fourteenth Army—the largest single army of the World War, was disbanded on 1st December, 1945. In 1944 and 1945 the Fourteenth Army was about one million strong. Just before the fall of Rangoon it had about 500,000 fighting men at its disposal.

The following divisions served with the Fourteenth Army:—the 2nd and 36th British Divisions; the 5th, 7th, 17th, 19th, 20th, 23rd, 25th and 26th Indian Divisions; the 11th East African Division and the 81st and 82nd West African Divisions. The army was grouped into three corps: the IV, XV and XXXIII Indian Corps. Later the XV Corps was detached from the Fourteenth Army for the 1945 Arakan and Rangoon offensive. A further corps—the XXXIV Corps—was formed for the invasion of Malaya.

* He was restored to the Active List on 30th October, 1945.

About 120,000 Japanese, over 40 per cent. of the total of the Japanese Army killed in the whole Far East War, were accounted for by the Fourteenth Army, whose own losses in killed were 17,000.

A glowing tribute to the Fourteenth Army is paid in a leading article in *The Times* issue of 1st December, 1945.

HOME GUARD.—The Home Guard was formally disbanded on 31st December, 1945.

Parades had ceased in September, 1944, and orders were issued for it to stand down on 1st November. At the end of August, 1944, there were 1,095 battalions of the Home Guard in Great Britain, with a total of 1,727,095 men and 30,696 women auxiliaries.

THE ROYAL MILITARY COLLEGE.—The 161 (R.M.C.) O.C.T.U., under the command of Lieut.-Colonel Sir William Makins, Welsh Guards, made its formal return on Sunday, 9th December, 1945, to the Royal Military College, Sandhurst. Major-General Sir Charles Keightley, Director of Military Training, inspected the parade and took the march past. Service in the Chapel followed.

At the outbreak of War the Royal Military College became an O.C.T.U., divided into two wings, one Royal Armoured Car and the other Infantry. In July, 1942, owing to the expansion of training of armoured forces, the Infantry Wing moved to Mons Barracks, Aldershot, and was redesignated 161 (R.M.C.) O.C.T.U.

ROYAL ENGINEERS.—A German standard captured by the Fifth Assault Regiment, R.E., at Walcheren in November, 1944, was presented to the Corps of Royal Engineers by Major-General Sir Percy Hobart at a ceremonial parade at Aldershot on 11th January.

R.A. MEMORIAL SERVICE.—The King and Queen were present at the Royal Artillery memorial service, in memory of all ranks who had given their lives in the service of King and Country, which was held in St. Paul's Cathedral on 4th December, 1945—St. Barbara's Day, St. Barbara being the patron saint of artillerymen.

In 1919, on St. George's Day, King George V and Queen Mary had attended in the same cathedral a similar memorial service to honour the dead of the Royal Artillery. The cathedral then had received only slight hurt from an anti-aircraft shell; on 4th December, 1945, it could offer little more than half its normal accommodation owing to war damage. Only 2,500 tickets could be issued, of which 1,500 were for relatives of the fallen and 200 for ex-prisoners of war. Representatives of every division associated with every theatre of war in which British troops had fought were present.

The King and Queen were received at the foot of the steps before the West Door by the Master Gunner, Field-Marshal Lord Milne.

SENIOR TRAINING CORPS.—The N.R.A. Inter-University S.T.C. .303 Postal Match for teams of eight was fired in 1945 on ranges available locally to the Universities. The first three teams were (1) Reading University, (2) Aberdeen University, (3) Manchester University.

JUNIOR TRAINING CORPS.—The S.M.R.C. Junior Training Corps small bore Rifle Match, 1945, was won by Glenalmond (Trinity College) with a record score of 775. The first three teams were (1) Glenalmond A, (2) Marlborough College A, (3) Glenalmond B. Wellingborough School were fifteenth and won prizes for the best of the smaller schools. Fifty-seven teams competed.

SOUTHAMPTON DOCKS.—The United States authorities have presented to Southampton Docks a bronze plaque to commemorate the passage of three and a half million American soldiers and much war material through the port.

The presentation ceremony was performed on 3rd January by Colonel Sherman L. Kiser, Commander, Fourteenth Major Port, United States Army; and the plaque was accepted on behalf of the Southern Railway by Mr. R. P. Biddle, docks and marine manager at Southampton Docks.

LORD MAYOR'S DAY.—Lord Mayor's Day, 1945 (9th November) was a unique and

historic occasion, for it was the first time in history that all the " privileged " Regiments of the City of London, viz., Grenadier Guards, The Buffs, The Royal Fusiliers, The Royal Marines and The Honourable Artillery Company, together with their regimental bands, marched together in exercise of their privilege through the City of London. The Colonels of the Regiments received the salute of their respective contingents at the Mansion House.

As a compliment the Lord Mayor permitted for the first time, and for the day only, the Royal Navy, the Royal Air Force and the Dominion and Indian Contingents to march within the City with their bayonets fixed. Detachments from each of the women's Services marched together headed by the bands of the A.T.S. and W.A.A.F. Contingents from the Army Cadet Force units of the Privileged Regiments and from the Sea Cadet Corps and the Air Training Corps also took part. The " Old Brigade " were represented by the Yeoman Wardens of the Tower, the Pikemen of the Honourable Artillery Company, both wearing their traditional dress, and by one hundred Standard Bearers of the British Legion.

CANADA

HONOURS.—The following awards to officers of the Canadian Army were included in the New Year Honours List of 1st January, 1946 :—

C.B.—Major-Generals C. P. Fenwick, C.B.E., M.C., E.D., and R. B. Gibson, C.B.E., V.D., and H. F. G. Letson, C.B.E., M.C., E.D., and A. E. Walford, C.B.E., M.M., E.D., and E. G. Weeks, C.B.E., M.C., M.M., and J. V. Young, C.B.E.

NEW COLOURS.—Field-Marshal Sir Harold Alexander, Governor-General designate of Canada, presented new Colours at Aldershot on 11th January to the Lake Superior Regiment, which fought through France, Belgium and Holland into Germany with the 4th Canadian Armoured Division.

AUSTRALIA

COMMANDER-IN-CHIEF.—It was announced in November that the Government had decided to re-establish soon a Military Board for the control of Australian Military Forces. As General Sir Thomas Blamey had asked to be permitted to retire as early as possible, Lieut.-General V. A. H. Sturdee was appointed acting Commander-in-Chief from 1st December, 1945, until the re-establishment of the Military Board. This Board has now apparently been formed, as an announcement on 19th December designated Lieut.-General Sturdee as Chief of the General Staff, with Major-General S. F. Rowell as Vice-Chief of the General Staff.

HONOURS.—The following award was included in the New Year Honours List of 1st January, 1946 :—

C.B.—Major-General (temporary) S. B. Rowell, C.B.E., Australian Military Forces.

VICTORIA CROSS.—Three awards of the Victoria Cross to Australian soldiers are recorded on page 133. Seventeen V.C's have been won during the late war by members of the Australian Military Forces.

NEW ZEALAND

HONOURS.—The following awards to officers of the New Zealand Military Forces were included in the New Year Honours List of 1st January, 1946 :—

K.C.B.—Lieut.-General (temporary) E. Puttick, C.B., D.S.O.

C.B.—Brigadier (temporary) L. G. Goss.

SOUTH AFRICA

HONOUR.—The following award was included in the New Year Honours List of 1st January, 1946 :—

C.B.—Brigadier P. de Waal, C.B.E., South African Staff Corps.

INDIA

ARMY INDIANIZATION.—Last October, the Government of India announced (see R.U.S.I. Journal for November, 1945, page 528) that henceforward British officers for the Indian Army would be obtained by secondment or attachment from the British Army, and that the quota of such seconded or attached British officers would be progressively reduced as Indian officers became available.

At the same time, it was made known that at that date there were in the Indian Army 2,300 Regular British officers, not counting the medical officers or the Army in India Reserve. Before the War there were 3,900 Regular British officers, some 1,600 of whom had either retired or had been killed. There were 450 Regular Indian officers left over from those who joined the Indian Army between 1918 and 1940; of the Emergency Commissioned officers 11,900 were Europeans and 8,000 Indians; between 1,800 and 2,000 Indian Emergency Commissioned officers had, up to date, made application for permanent commissions.

NEPAL.—The independent Kingdom of Nepal during the late war sent to India nine battalions of infantry and pioneers from its own army.

In addition, Nepal agreed to the increase of the number of Gurkha battalions in the Indian Army from twenty to forty. Over 100,000 men were recruited from Nepal for these battalions, although the country has a population of less than 7,000,000 and its own army to maintain.

AIR NOTES

GREAT BRITAIN

H.M. The King

Group Captain (Acting Air Commodore) O. W. de Putron has been appointed Additional Air Aide-de-Camp to the King, in succession to the late Group Captain (Acting Air Commodore) S. H. Hardy, C.B.E. (1st November, 1945).

Air Vice-Marshal T. J. Kelly, C.B.E., M.C., has been appointed an Honorary Surgeon to the King, in succession to Air Vice-Marshal F. C. Cowtan, C.B., who vacates the appointment on retirement from the R.A.F. (14th December, 1945).

The Air Council

Marshal of the R.A.F. Sir Arthur William Tedder, G.C.B., on 1st January succeeded Marshal of the R.A.F. Lord Portal of Hungerford, G.C.B., D.S.O., M.C., as Chief of the Air Staff.

The Air Ministry announced on 15th December that Group Captain Sir Louis Greig had relinquished his appointment as Personal Air Secretary to the Secretary of State for Air, and is succeeded by Wing Commander G. L. Sinclair.

Air Vice-Marshal (Acting Air Marshal) Sir W. Alec Coryton, K.B.E., C.B., M.V.O., D.F.C., has been appointed an additional Member of the Air Council on appointment to the Ministry of Aircraft Production (15th October, 1945).

Appointments

The following appointments were announced on the dates stated :—

23rd November, 1945.—Air Marshal Sir Charles E. H. Medhurst to be Air Commander-in-Chief, R.A.F., Mediterranean Middle East.

It was explained that, after the reduction of forces in the two theatres, Headquarters, Mediterranean and Middle East Command, hitherto located in the Royal Palace of Caserta, near Naples, is now merged with Headquarters, R.A.F., Middle East (Cairo). The whole movement from Italy, including that of equipment and documents, was carried out by air.

R.A.F. Mediterranean Middle East Command covers air activities in the Central Mediterranean, North Africa, the Middle East area, including the Levant, Iraq and Sudan, and in Aden and East Africa. Air Headquarters, Italy, under the same Command, has been established to supervise R.A.F. units remaining in Italy and Austria.

Air Marshal Sir Charles Medhurst was appointed Air Officer Commanding-in-Chief, Middle East Command, in February, 1945.

28th September, 1945.—Air Vice-Marshal C. B. S. Spackman to be Air Officer Commanding No. 19 Group, Coastal Command.

Air Vice-Marshal Sir Harry Broadhurst to be Air Officer in Charge of Administration, Fighter Command.

3rd November, 1945.—Air Vice-Marshal J. D. Breakey to be Air Officer Commanding Air Headquarters, Malaya.

Air Vice-Marshal Sir Basil E. Embry to be Director-General of Training, Air Ministry.

Air Vice-Marshal C. E. N. Guest to be Air Officer, Transport Command, South-East Asia.

Air Commodore J. D. I. Hardman, Air Officer Commanding No. 232 Group, to be Air Vice-Marshal.

30*th November*, 1945.—Air Vice-Marshal G. B. A. Baker, C.B., M.C., to be Director of Training (Plans), in the Department of the Air Member for Training.

Air Vice-Marshal W. J. B. Curtis, C.B.E., to be Air Officer Commanding No. 40 Group, Maintenance Command.

14*th December*, 1945.—Air Vice-Marshal R. Graham, Commandant of the R.A.F. Staff College since December, 1944, to be Head of Air Section, U. K. Mission to Australia.

Air Vice-Marshal Sir Brian E. Baker, Senior Air Staff Officer, Mediterranean Middle East, since last April, to be Deputy Air Commander-in-Chief, Headquarters, R.A.F., Mediterranean Middle East.

Air Vice-Marshal A. P. M. Sanders, A.O.A., Bomber Command, since January, 1943, to be Commandant, Royal Air Force Staff College.

Air Vice-Marshal E. S. Goodwin, Director-General of Training, Air Ministry, since March, 1941, to be Air Officer in Charge of Administration, H.Q., Bomber Command.

Air Commodore E. F. Waring, in command of R.A.F. Base, Bombay, since December, 1944, to be Air Officer Commanding, No. 225 Group, Base Air Forces, South-East Asia.

10*th December*, 1945.—Air Commodore Lord Bandon, Air Officer Commanding No. 224 Group, South-East Asia, since July, 1944, to be Commandant of the Royal Observer Corps, in succession to Air Commodore Finlay Crerar.

24*th December*, 1945.—Air Vice-Marshal G. A. H. Pidcock to be President of the Ordnance Board, Ministry of Supply.

Air Vice-Marshal D. V. Carnegie, Head of the British Air Mission to Canada since March, 1945, to be R.A.F. Adviser to the High Commissioner for Canada.

18th *January*, 1946.—Air Vice-Marshal Sir Hugh P. Lloyd to be R.A.F. Instructor at the Imperial Defence College.

Air Vice-Marshal A. C. Stevens to be Air Officer Commanding, No. 4 Group, Transport Command.

11*th January*, 1946.—Air Vice-Marshal Andrew Grant to be Director-General of Royal Air Force Medical Services from 1st March, in succession to Air Marshal Sir Harold E. Whittingham, who relinquishes that post on 28th February.

15*th December*, 1945.—The Secretary of State for Air has appointed Dr. H. R. Hulme to be Scientific Adviser to the Air Ministry. Dr. Hulme will be responsible for the planning of operational, administrative and training research for the Royal Air Force.

20*th Dcember*, 1945.—Mr. W. S. Farren, Director of the Royal Aircraft Establishment since July, 1941, is appointed to the post of Technical Director of the Blackburn Aircraft Company, Ltd. (31st December), and is succeeded as Director of the Royal Aircraft Establishment by Mr. W. G. A. Perring.

Promotions

The following Air Chief Marshals to be Marshals of the Royal Air Force, 1st January, 1946, in recognition of distinguished service during the war in Europe :—

Air Chief Marshal Sir W. Sholto Douglas, K.C.B., M.C., D.F.C.

Air Chief Marshal Sir Arthur T. Harris, G.C.B., O.B.E., A.F.C.

Air Marshal to Air Chief Marshal, 1st January, 1946 :—
Sir Arthur S. Barratt, K.C.B., C.M.G., M.C.
Sir Douglas C. S. Evill, G.B.E., K.C.B., D.S.C., A.F.C.
Sir A. Guy R. Garrod, K.C.B., O.B.E., M.C., D.F.C.
Sir John C. Slessor, K.C.B., D.S.O., M.C.

Air Vice-Marshal (acting Air Marshal) to Air Marshal. 1st January, 1946 :—
Sir Charles E. H. Medhurst, K.C.B., O.B.E., M.C.
Sir James M. Robb, K.B.E., C.B., D.S.O., D.F.C., A.F.C.

Air Vice-Marshal (temporary Air Marshal) to Air Marshal, 1st January, 1946 :—

Sir Keith R. Park, K.C.B., K.B.E., M.C., D.F.C. (acting Air Chief Marshal).
Sir Grahame Donald, K.C.B., D.F.C., A.F.C.
Sir Norman H. Bottomley, K.C.B., C.I.E., D.S.O., A.F.C.
Sir Arthur Coningham K.C.B., K.B.E., D.S.O., M.C., D.F.C., A.F.C.

Air Vice-Marshal (acting Air Marshal) to Air Marshal (temporary), 1st January, 1946 :—

G. C. Pirie, K.B.E., C.B., M.C., D.F.C.
Hon. Sir Ralph A. Cochrane, K.B.E., C.B., A.F.C.
Sir W. Alec Coryton, K.B.E., C.B., M.V.O., D.F.C.
Sir Leslie N. Hollinghurst, K.B.E., C.B., D.F.C.
Sir Ralph S. Sorley, K.C.B., O.B.E., D.S.C., D.F.C.

Air Commodore to Air Vice-Marshal (temporary), 1st January, 1946 :—

S. D. Macdonald, C.B.E., D.F.C.

(Note.—Twenty-seven other Air Commodores, already acting Air Vice-Marshals, also received promotion to Air Vice-Marshal (temporary)).

Technical Branch—Air Commodore to Air Vice-Marshal (temporary), 1st January, 1946 :—

T. A. Warne-Browne, C.B.E., D.S.C.

(Note.—Eight other Air Commodores, already acting Air Vice-Marshals, also received promotion to Air Vice-Marshal (temporary)).

Grant of Acting Rank :—

Air Commodore J. D. I. Hardman, O.B.E., D.F.C., as Air Vice-Marshal (1st October, 1945).

Air Commodore A. C. Stevens, C.B., as Air Vice-Marshal (15th December, 1945).

Retirements

Air Chief Marshal Sir Edgar R. Ludlow-Hewitt, G.B.E., K.C.B. C.M.G., D.S.O., M.C., A.D.C. (19th November, 1945).

Air Marshal (temporary Air Chief Marshal) Sir Richard E. C. Peirse, K.C.B., D.S.O. A.F.C., retaining the rank of Air Chief Marshal (6th May, 1945).

Air Commodores, retaining the rank of Air Vice-Marshals :—

C. H. K. Edmonds, C.B.E., D.S.O. (3rd October, 1945).

C. E. W. Lockyer, C.B., (16th October, 1945).

R. L. G. Marix, C.B., D.S.O. on account of medical unfitness for Air Force service (6th December, 1945).

H. G. Smart, C.B.E., D.F.C., A.F.C., (16th November, 1945).

A. P. Ritchie, C.B.E., A.F.C., (28th December, 1945).

Honours and Awards

The Victoria Cross

It was announced on 26th October that the King had conferred the award of the Victoria Cross in recognition of conspicuous bravery on

Sergeant (now Warrant Officer) Norman Cyril Jackson, R.A.F.V.R., 106 Squadron.

This airman was the flight engineer of a Lancaster in an attack on Schweinfurt on the night of 26th April, 1944. Bombs had been dropped successfully when it was attacked by a fighter at about 20,000 feet, the enemy securing many hits. A fire started near a petrol tank on the upper surface of the starboard wing. Sergeant Jackson was wounded

during the engagement, but undertook to deal with the fire. He started to climb out of the cockpit and back along the top of the fuselage to the starboard wing, but before he could leave the fuselage his parachute pack opened and the whole canopy and rigging lines spilled into the cockpit. The pilot, bomb aimer and navigator gathered the parachute together and held on to the rigging lines, paying them out as the airman crawled aft. Eventually he slipped and, falling from the fuselage to the starboard wing, grasped an air intake on the leading edge of the wing. He succeeded in climbing on, but lost the fire extinguisher, which was blown away.

By this time the fire had spread rapidly, and Sergeant Jackson's face, hands and clothing were severely burnt. Unable to retain his hold, he was swept through the flames and over the trailing edge of the wing, dragging his parachute behind. When last seen it was only partly inflated and burning in a number of places. Realizing that the fire could not be controlled, the captain gave the order to abandon aircraft. Four of the remaining members of the crew landed safely. The captain and rear gunner have not yet been accounted for. Sergeant Jackson was unable to control his descent and landed heavily. His injuries, together with the wounds received earlier, reduced him to a pitiable state. At daybreak he crawled to the nearest village, where he was taken prisoner. After ten months in hospital he made a good recovery.

This airman's attempt to extinguish the fire and save the aircraft and crew from falling into enemy hands was an act of outstanding gallantry. By his ready willingness to face the dangers he set an example of self-sacrifice which will ever be remembered.

It was announced on 13th November that the King had conferred the award of the Victoria Cross in recognition of conspicuous bravery on

The late Flight-Lieutenant David Samuel Anthony Lord, D.F.C., R.A.F., 271 Squadron.

Flight-Lieutenant Lord was pilot and captain of a Dakota aircraft detailed to drop supplies at Arnhem on 19th September, 1944. Our airborne troops had been surrounded and were being pressed into a small area defended by a large number of anti-aircraft guns. Air crews were warned of intense opposition. To ensure accuracy they were ordered to fly at 900 feet when dropping their containers. While at 1,500 feet near Arnhem the starboard wing of Flight-Lieutenant Lord's aircraft was twice hit by anti-aircraft fire. The starboard engine was set on fire, but on learning that the dropping zone would be reached in three minutes, he decided to complete his mission, as the troops were in dire need of supplies.

With the starboard engine burning furiously, Flight-Lieutenant Lord came down to 900 feet, where he was singled out for the concentrated fire of the enemy's anti-aircraft guns. On reaching the dropping zone he kept the aircraft on a straight and level course while supplies were dropped. At the end of the run he was told that two containers remained. Although he must have known that the collapse of the starboard wing could not be long delayed, Flight-Lieutenant Lord circled, rejoined the stream of aircraft and made a second run to drop the remaining supplies. His task completed, Flight-Lieutenant Lord ordered his crew to abandon the Dakota, making no attempt himself to leave the aircraft, which was down to 500 feet. A few seconds later the starboard wing collapsed and the aircraft fell in flames. Flight-Lieutenant Lord was the first member of the R.A.F. Transport Command to win the V.C.

New Year Honours

The following were among the New Year Honours conferred by the King :—

Order of Merit.—Marshal of the R.A.F. the Right Hon. Baron Portal of Hungerford, G.C.B., D.S.O., M.C.

Viscount.—Marshal of the R.A.F. the Right Hon. Baron Portal of Hungerford, G.C.B., D.S.O., M.C.

Baron.—Marshal of the R.A.F. Sir Arthur W. Tedder, G.C.B.

G.C.B.—Air Chief Marshal Sir W. Sholto Douglas, K.C.B., M.C., D.F.C., Air Chief Marshal Sir Edgar R. Ludlow-Hewitt, G.B.E., K.C.B., C.M.G., D.S.O., M.C., A.D.C.

K.C.B.—Air Vice-Marshal Alan Lees, C.B., C.B.E., D.S.O., A.F.C., Air Vice-Marshal John W. Cordingley, C.B., C.B.E.

C.B.—Air Vice-Marshal G. H. Ambler, C.B.E., A.F.C., A.A.F., Air Vice-Marshal F. J. Fogarty, D.F.C., A.F.C., Air Vice-Marshal A. F. Rook, O.B.E., Air Vice-Marshal R. S. Blucke, C.B.E., D.S.O., A.F.C., Air Vice-Marshal D. A. Boyle, C.B.E., A.F.C., Air Vice-Marshal H. A. Constantine, C.B.E., D.S.O., Air Vice-Marshal E. J. Cuckney, C.B.E., D.S.C., Air Vice-Marshal G. Harcourt-Smith, C.B.E., M.V.O., Air Vice-Marshal F. F. Inglis, C.B.E., Air Vice-Marshal A. F. Lang, M.B.E., A.F.C., Air Vice-Marshal C. W. Weedon, C.B.E., Air Vice-Marshal J. R. Whitley, C.B.E., D.S.O., A.F.C., Air Vice-Marshal W. M. Yool, C.B.E., Air Commodore G. G. Banting, C.B.E., Air Commodore A. Hesketh, C.B.E., D.F.C., Air Commodore H. W. Heslop, O.B.E., Air Commodore G. S. Hodson, C.B.E., A.F.C., Air Commodore H. D. Jackman, C.B.E., Air Commodore J. L. Kirby, C.B.E., Air Commodore F. W. Long, Air Commodore H. J. Roach, C.B.E., A.F.C., Air Commodore C. G. Smith, C.B.E., Air Commodore G. F. Smylie, D.S.C., Air Commodore C. G. Wigglesworth, A.F.C., Air Commodore H. L. Woolveridge, O.B.E., Air Commodore N. S. Allinson, Air Commodore F. R. Banks, O.B.E., Air Commodore C. D. C. Boyce, C.B.E., Air Commodore R. Byrne, M.C., Air Commodore H. I. Cozens, A.F.C., Air Commodore E. H. Fielden, C.V.O., D.F.C., A.F.C., Air Commodore L. G. Harvey, Air Commodore R. B. Lees, C.B.E., D.F.C., A.D.C., Air Commodore J. R. Mutch, Air Commodore N. S. Paynter, Air Commodore T. G. Pike, C.B.E., D.F.C., Air Commodore L. F. Sinclair, G.C., C.B.E., D.S.O., A.D.C., Air Commodore F. Woolley, O.B.E., D.F.C., Group Captain F. C. V. Laws, C.B.E.

G.B.E.—Air Marshal Sir Douglas C. S. Evill, K.C.S., D.S.C., A.F.C.

K.B.E.—Air Marshal Sir Arthur Coningham, K.C.B., D.S.O., M.C., D.F.C., A.F.C., Air Marshal George C. Pirie, C.B., C.B.E., M.C., D.F.C., Air Marshal Horace E. P. Wigglesworth, C.B., C.B.E., D.S.C., Air Vice-Marshal John H. D'Albiac, C.B., D.S.O., Air Vice-Marshal William F. Dickson, C.B., C.B.E., D.S.O., A.F.C., Air Vice-Marshal William Elliot, C.B., C.B.E., D.F.C., Air Vice-Marshal Thomas W. Elmhirst, C.B., C.B.E., A.F.C., Air Vice-Marshal Ephraim W. Havers, C.B., C.B.E., Air Vice-Marshal Alfred S. Morris, C.B.E., Air Vice-Marshal Edward A. B. Rice, C.B., C.B.E., M.C., Air Vice-Marshal Arthur P. M. Sanders, C.B., C.B.E., Air Vice-Marshal Stanford Cade, C.B., R.A.F.V.R., Air Vice-Marshal Charles P. Symonds, C.B., R.A.F.V.R.

C.B.E.—Awards of the C.B.E. were also made to 118 officers between the ranks of Air Vice-Marshal and Wing Commander, inclusive.

Personnel

Grading of Pilots.—As a safety measure and to keep up the standard of instrument flying attained during the War, a system of grading pilots according to their ability in flying by instruments has been introduced. Pilots are being divided into two classes—holders of green cards, who are permitted to use their own discretion as to the suitability of the weather for making an authorized flight; and holders of white cards, who have proved their ability at instrument flying but are not in full flying practice. The latter will be subject to certain weather restrictions. Rating cards will be renewed every twelve months. To obtain a green card a pilot must have flown at least 750 hours as first pilot, including a minimum of 50 hours' instrument flying, of which at least five hours must have been during the preceding six months. For a white card, a pilot must have had at least five hours instrument flying or two hours actual instrument flying and eight hours simulated conditions in a synthetic trainer. Pilots who are not rated will have to submit flight plans and will be allowed to fly only in conditions of good visibility.

World Air Speed Record

The world air speed record of 469 miles an hour, set up by a Messerschmitt 109 at Augsburg in April, 1939, was broken at Herne Bay on 7th November. Group Captain

H. J. Wilson, A.F.C., of the Royal Aircraft Establishment, Farnborough, covered four laps over a three kilometre course at an average speed of 606.25 m.p.h., his lap speeds being 604, 608, 602 and 611 m.p.h. Later on the same day, Mr. Eric Greenwood, chief test pilot of the Gloster Aircraft Company, also attempted a record, but his average speed was 603 m.p.h., his lap times being 599, 608, 598 and 607 m.p.h. Meteor jet propelled aircraft were used, powered by two Rolls-Royce Derwent V engines.

End of Flying Restrictions

The Air Ministry and Ministry of Civil Aviation announced on 6th December that the Air Navigation (Restriction in Time of War) Orders, 1939 and 1940, imposing restrictions on the flight of civil aircraft in the United Kingdom, would be revoked on 1st January, 1946. It is no longer necessary to obtain a permit in writing, issued by, or on behalf of the Secretary of State for Air, for flights to, in, or over the United Kingdom. Details of the rules for the safety of flight, and other matters affecting the safety of air navigation, will be promulgated in notices to airmen, issued by the Ministry of Civil Aviation. It will be some time before normal peace-time airfield facilities can be restored.

Bomber Command Casualties

Figures issued by the Air Ministry on 11th November, 1945, show that the total casualties suffered during the War by the R.A.F. Bomber Command numbered 79,147. Of this total, 64,780 were battle casualties—that is, casualties suffered in action—and 14,367 were non-battle casualties, listed as casualties on active service.

The battle casualties were made up as follows:—Air: killed, 39,291; missing, 10,961; prisoners of war, 9,843; wounded, 4,167. Ground: killed and missing, 318; wounded, 200. Total 64,780.

The non-battle casualties were: Air: killed, 8,088; missing, 267; prisoners of war, 77; wounded, 4,095. Ground: killed, 696; wounded or injured, 619; died of natural causes, 525. Total 14,367.

The figures for missing include those who returned safely as well as those still unaccounted for and not yet reclassified as killed or prisoners of war. The figures for wounded are for casualty incidents, not for the number of individual wounded; that is, a man wounded three times is recorded as three, and if subsequently killed this would provide four casualties in respect of one man. These are gross figures, and until reclassification of the "missing" categories has been completed entirely accurate statistics cannot be made available.

DOMINIONS AND COLONIES

AUSTRALIA

C.B.E.—On 19th October, Group Captain Leon V. Lachal, R.A.A.F., was awarded the C.B.E., in recognition of conspicuous service in operations against the Japanese.

Contingent for Japan.—A force of about 2,500 R.A.A.F. volunteers had been prepared to represent Australia in the occupying force for Japan and was in readiness to leave Labuan for Tokyo when the move was postponed indefinitely by General MacArthur on 13th October. The movement of an advance party of sixteen officers and 160 other ranks to Japan was cancelled.

CANADA

Air Minister's Tour.—Colonel Colin Gibson, Canadian Minister of National Defence for Air, arrived at Northolt airport on 6th January, in the R.C.A.F. Liberator normally used by the Canadian Prime Minister, on the start of a tour of R.C.A.F. units oversea.

Oversea Command.—Air Marshal George Johnson was received by the King on 23rd November on his appointment as Air Officer Commanding-in-Chief, R.C.A.F. Oversea.

REVIEWS OF BOOKS

GENERAL

B.B.C. War Report: 6th June, 1944, to 5th May, 1945. (Oxford University Press). 12s. 6d.

This is a record of dispatches broadcast by the B.B.C's. war correspondents with the Allied Expeditionary Force in North-West Europe from D-Day to the German surrender. The book has been arranged and edited so as to present a continuous narrative of events. This work has been done well. Most of us will remember some of these War Reports, which were originally broadcast after the Nine o'clock News. They were personal and informal statements having the vivid freshness of impressions of the moment. Memories of the past are apt to fade or, perhaps more often, to become distorted. It is well that these War Reports have been recorded. Though not history, they will be of considerable value to future historians.

Not the least interesting portion of the book is that which describes the organization and preparations carried out by the B.B.C. before D-Day and the various problems and difficulties which were so skilfully surmounted.

Field-Marshal Montgomery contributes a Foreword commending this well-produced volume.

Green Armour. By Osmar White. (George Allen & Unwin Ltd.) 12s. 6d.

In this book a young New Zealand war correspondent describes his experiences during the early days of the war against the Japanese in the Pacific. He was in New Guinea from February to October, 1942, when he was invalided to Australia. Later he spent three months with American forces in the South-West Pacific before being wounded in July, 1943.

Written with journalistic skill, the book is very readable. The author tells a vivid story of the grim fighting in New Guinea, laying great emphasis on the climatic and geographical difficulties encountered. His comments are shrewd. Throughout, he stresses the importance of thorough training of troops for the task in hand; the reactions of raw and inexperienced troops are candidly portrayed.

To English readers the spelling of many words in American fashion may be an irritation, *e.g.*, "defense," "maneuvers," "center"; but this is only a minor criticism of an interesting book.

NAVAL

Operation Neptune. By Commander Kenneth Edwards, R.N. (Collins, London.) 12s. 6d.

"Operation Neptune" was, as is tolerably well known nowadays, the code name for the naval side of the Invasion of Normandy, and to describe the full details of this gigantic operation, making it comprehensible to the layman, is a big task. Admiral Sir Bertram Ramsay told Commander Edwards "Operation Neptune deserves a book," but naturally left the difficulties of planning and writing it to the author, who has acquitted himself well.

Not the least difficulty of the task was to concentrate into a book of just over three hundred pages the necessary details which would be demanded by the Service reader interested in the vast organization and execution, together with sufficient picturesque touches to appeal to the layman. Even many of those who took part in the actual operations still have some difficulty in seeing the wood for the trees, and to such the book will not only be a pleasant reminder of one of the great turning-points of the War, but also a means of better understanding the difficulties which they helped to overcome. It is divided into an introduction, three main sections on "Preparation," "Execution" and "Consolidation," and an epilogue aptly named "Culmination."

Without doubt the organization before the actual landing was the most important from the professional viewpoint, for it makes a very striking comparison with what happened in the Gallipoli operation and the famous description of the organization of the trooping service which General Paris gave to Admiral Wemyss. The Normandy Coast was a far harder nut to crack than the Peninsula and without this careful organization lives and gallantry would have been as wasted as they were in 1915. Indeed the co-operation of the British Services in the preliminary organization for the Invasion of France could be described as being as near perfect as possible, and it was doubtless a very unpleasant surprise to the Germans, who have always been fond of expressing contempt for our ability in that respect. The correct appreciation of a steady stream of intelligence lasting for many months, interminable hard work and unselfish co-operation, with determination to over-ride precedent and hidebound regulations whenever it appeared necessary, produced these results. Naturally it was not done without great difficulty in securing agreement, not only from British Civil and Service heads but also from the Americans, who considered that we were over-organizing and not leaving enough to the decisions of the men on the spot. Happily the results justified the policy and the Americans were the first to acknowledge it.

The satisfactory result of this preliminary organization is one of the best justifications of the book. Admiral Ramsay remarked that there was a grave danger that people would not appreciate the magnitude and difficulties of " Operation Neptune " because everything had gone according to plan. In fact only one transport got mislaid and left without orders; it was particularly unfortunate that she was the well-known British India Liner " Neuralia " which had done so many years magnificent trooping work in peace and war, and it was no fault of her people or the elements of the Seventh Armoured Division on board that she was anchored at Spithead for three days after she should have been off the beaches. It was subsequently discovered that the mistake had arisen through her substitution by the War Office, at the last moment, for another ship and notification of this change not having been received by the authorities responsible for making up the outgoing convoys at Spithead. The author remarks that it is an astonishing fact that the absence of these important troops was never questioned by the Second Army, which was apparently unaware that they had not arrived in Normandy on the appointed day and that this, perhaps, is an illustration of the speed with which events were moving particularly in reference to the build-up. An alternative suggestion is that the Army authorities on shore took it for granted that the ship had been sunk, for the British were nearly as surprised as the Germans at the very small success of the latter's efforts to cut the lines of communication.

In dealing with the efforts of the U-boats in some detail, the author gives generous credit to the fine co-operation between the Coastal Command and the Navy, and the excellent results.

It is easy enough to pick plums out of the book but not so easy to select them justly, for it is made up of a very rich mixture and there is plenty of fruit for all tastes. Even the first part of eight chapters on Preparation, which naturally has to deal with a very technical subject in a serious manner, seldom fails to introduce the human touches, and this helps to give a good understanding of the preliminary work.

It is, perhaps, ungracious to demand more, with war-time difficulties of production, than a book of over 300 pages, well printed and excellently illustrated, although most of the pictures are from official sources and already tolerably well known to the public. But its value as a book of reference would certainly have been increased by the publication of certain appendices, and the index is very disappointing and quite unworthy of the contents of the book. Even a large proportion of the headings published at the top of each chapter, and in the table of contents, do not find a place in the index.

The Price of Admiralty. By Lieutenant Paul McGuire, R.A.N.V.R. and Frances Margaret McGuire. (Humphrey Milford Ltd.) 15s.

This book seems to have been started with the intention of giving an intimate account of the Royal Australian Navy; but it gives the impression that the first idea was abandoned as the work progressed, although that may be due to the fact that it was completed in 1944.

The eight chapters in Part I seem to promise the unusual and ingenious idea of giving the history of the Service in the form of a biography of one of its officers. That is, of course, quite practical when it is only employed to cover a comparatively few years, and it makes an excellent start in the particularly attractive personality of the central figure—the late Acting Commander Jefferson Hirst Walker, R.A.N. His Service career also covers nearly the whole story, for he was one of the first Cadets in the Jervis Bay College, serving in the Royal Navy at the end of the War of 1914-18 and in the Royal Australian Navy in the promising years before its prospects were blighted by the need for economy. This part is the most satisfactory because it gives a large number of facts which are all too little known. It pays considerable attention to historical tradition, which is of necessity principally concerned with the British Navy, and if the details sometimes appear to have been rather dragged in, they are of interest and importance to Australian readers whose Navy has fully earned its right to share them.

The last chapter of this part becomes more personal, but is none the less interesting from a general viewpoint as it describes the early days of Port Darwin, which was later to be so much in the news.

The nineteen chapters in Part II take a much narrower view and deal with the story of H.M.A. escort sloop "Parramatta" from her launch just before the outbreak of war to her sinking, with the greater part of her ship's company, in the Eastern Mediterranean in November, 1941. Nearly two hundred pages are devoted to the war adventures of this one small ship with very little reference to the more important events which were occurring all round her, and still less to the manner in which the Australian Navy was developing in the meantime, the administrative problems which were being overcome, and the manner in which the personnel was being built up and trained. All those are matters on which we would have liked more information, pending the official histories that will come later.

The ship, like so many others of her type, was kept very fully employed and carried out her functions well. The ship's company was obviously a very efficient one, although that fact is not recounted in any detail but only introduced in more or less casual references in Commander Walker's letters to his wife, to successful anti-aircraft operations or sporting tussles with bigger ships' companies. These letters take up more and more of the space and give an excellent idea of the man and a lot of odd information concerning the doings of the ship, but they were intended to be the ordinary correspondence of an individual and a good deal of their interest is confined to those who knew him personally, for they were never meant to be history. They cover strenuous service in the Red Sea and Eastern Mediterranean. While there is such an excellent opportunity to give an intimate account of life in an Australian ship, showing the thousand and one minor differences between British and Australian routine which must have developed with the growing individuality of the Commonwealth Navy, practically nothing is done in that direction and the reader is presumed to be fully informed. This is all the more noticeable by comparison with the amount of detail given in the writing of Part I.

Nevertheless, this is an entertaining book, excellently written, and it holds the attention even if it does not always give the reader, particularly the reader in this country, what he would like to know. It is excellently produced and the illustrations, both in their number, character and reproduction, are particularly welcome after so much enforced austerity. Three indexes are provided, but that dealing with subjects is disappointing.

Flat Top—The Story of an Escort Carrier. By F. D. Ommanney. (Longmans, Green & Co.) 3s. 6d.

This vivid little story of the daily doings in an escort carrier while on convoy duties en route to North Russia has only one serious defect—it is too short. The reader has only just become enthralled with the personalities, their adventures, and the technique of the Naval Air Branch when he finds the author saying a sad farewell to his Flat-Top. We wish he had stayed in her longer so that he could have had more to tell.

The photographs are as live as the text.

The Royal Navy; April, 1942—June, 1943. By Commander E. Keble Chatterton, R.N.V.R. (Hutchinson & Co.) 21s.

This is a picture book rather than a history. The 427 illustrations, mostly reproductions of photographs, give a vivid impression of the activities of the Navy in their many shapes and forms and in many different theatres of the War. As such it is an attractive production.

It is the third volume of the series.

MILITARY

Tanks in the East. By Colin Kerr. (Oxford University Press.) 12s. 6d.

This well produced book of 200 pages of good, clear type is a record of the 9th Australian Divisional Cavalry Regiment during its 22 months tour of service in the Middle East in 1941 and 1942. This service was spent mainly in Palestine and Syria, ending with a spell—from July to November, 1942—on the Egyptian border which included the Battle of Alamein. Shortly after that battle, the Regiment returned to Australia.

Primarily the story is a regimental history of special interest to Australians as being written by an Australian serving in the ranks of the Regiment, but it will be read with pleasure in this country also. The author writes with a light and skilful touch, and his description of military life in Palestine and Syria during the peaceful period after the collapse of the Vichy French is of special interest.

The British Army. By Lieut.-Colonel Graham Seton Hutchison. (Gramol Publications Ltd.) 7s. 6d.

As the author says, this small volume is intended primarily for boys, and Field-Marshal Montgomery in his foreword recommends it to the youth of the Empire. Much information of every kind concerning the Army, past and present, is to be found within its pages; but there is no attempt to produce a chronological history. Rather is the book a tribute to the British Soldier of all times. Many of the heroic actions of regiments and individuals during the ages and right up to 1945 are recorded in glowing terms, and special stress is laid on the numerous examples of inspiring leadership and devotion to duty. Amongst the acknowledgments made for assistance the Institution is not mentioned.

ADDITIONS TO THE LIBRARY

GENERAL

THE PROBLEM OF SECURITY. By Lt.-General Sir Giffard Martel. 8vo. (Joseph, 1945.) 10s. 6d.

REPORT FROM GERMANY. By Leonard O. Mosley. 8vo. (Gollancz, 1945.) 3s. 6d.

A SHORT HISTORY OF FRANCE. By Sir J. A. R. Marriott. 8vo. (Methuen, 1945 Edition.) 15s.

WHY WE LOST SINGAPORE. By Dorothy Crisp. 8vo. (Crisp, 1945.) 12s. 6d.

TOBRUK. By Chester Wilmot. 8vo. (Angus & Robertson, 1945.) 15s. An Account of the Capture, Siege and Relief, 1941.

THINKING TO SOME PURPOSE. By Professor L. S. Stebbings. (Pelican, 1945.) 9d. A Study on the Exercise of the Mind by a Professor of London University.

STILL TIME TO DIE. By Jack Belden. 8vo. (Gollancz, 1945.) 10s. 6d. A psychological study of his own reactions by a front line fighter on various fronts during the late war.

DUEL FOR THE NORTHLAND. By Kurt Singer. 8vo. (Hale, 1945.) 12s. 6d. The war against enemy agents in Scandinavia.

COMMUNITY CENTRES. By Air Vice-Marshal H. K. Thorold & D. G. Farrow. (Home & Van Thal, 1945.) 6s. Presented by Air Vice-Marshal Thorold. Suggested plans for post-war adult education.

PRÉCIS WRITING. By T. W. Moles. 8vo. (Murray, 1945.) 2s. 3d.

COLONIES AND THE INTERNATIONAL CONSCIENCE. By A. C. Jones and R. Hinden. Pamphlet. (Gollancz, 1945.) 1s. 3d.

DUNKIRK. By A. D. Divine. 8vo. (Faber, 1945.) 15s.

JOURNALISM. By Tom Clarke. (Brochure by Robert Ross & Co., Ltd., 1945.) Presented by the Publishers.

ATOMIC ENERGY. By H. D. Smyth. (Booklet by U.S. Government Printing Office and republished by H.M. Stationery Office, 1945.) A general account of the development of methods of using atomic energy for military purposes under the auspices of the U.S. Government.

INDIA'S V.C's IN TWO WARS. (Brochure by *The Civil and Military Gazette*, Lahore, for P.R.O., G.H.Q., India.) 8 annas. Presented by G.H.Q., India.

VICTORIA CROSS AND GEORGE CROSS. (Brochure by *Times of India* Press, Bombay.) Presented by G.H.Q., India.

EL ALAMEIN TO THE RIVER SANGRO. By Field-Marshal Sir B. L. Montgomery. 8vo. (Private.) Presented by the Author. (This book will not be sent out on loan.)

LOOK TO NORWAY. By William Warbey. 8vo. (Secker & Warburg, 1945.) 12s. 6d. A Study of the Norwegian will to resist.

SINGAPORE IS SILENT. By George Weller. 8vo. (Harcourt Brace & Co., New York, 1943.) $3.00. The story of the Malayan retreat and the battle of Singapore, by the special correspondent of the *Chicago Daily News*.

DICTATORSHIP AND POLITICAL POLICE. By E. K. Bramstedt. 8vo. (Kegan Paul, 1945.) A historical survey of the subject covering Bonapartism in France and Nazism in Germany.

FIFTH COLUMN AT WORK. By B. Bĺek. 8vo. (Lindsay Drummond, 1945.) 15s. The organization of the German fifth column in Czechoslovakia, 1936–39.

THE FALL OF THE CURTAIN. By Count Folke Bernadotte. 8vo. (Cassell, 1945.) 5s. Last days of the Third Reich.

JAPAN IN DEFEAT. (Pamphlet by a Chatham House Study Group.) 1945. 6s.

FOOTHOLD IN EUROPE. By "Strategicus." 8vo. (Faber, 1945.) 10s. 6d.

THE CHALLENGE OF RED CHINA. By Gunther Stein. 8vo. (Pilot Press, 1945.) 15s.

A MIND ON THE MARCH. By Somerset de Chair. 8vo. (Faber, 1944.) 10s. 6d.

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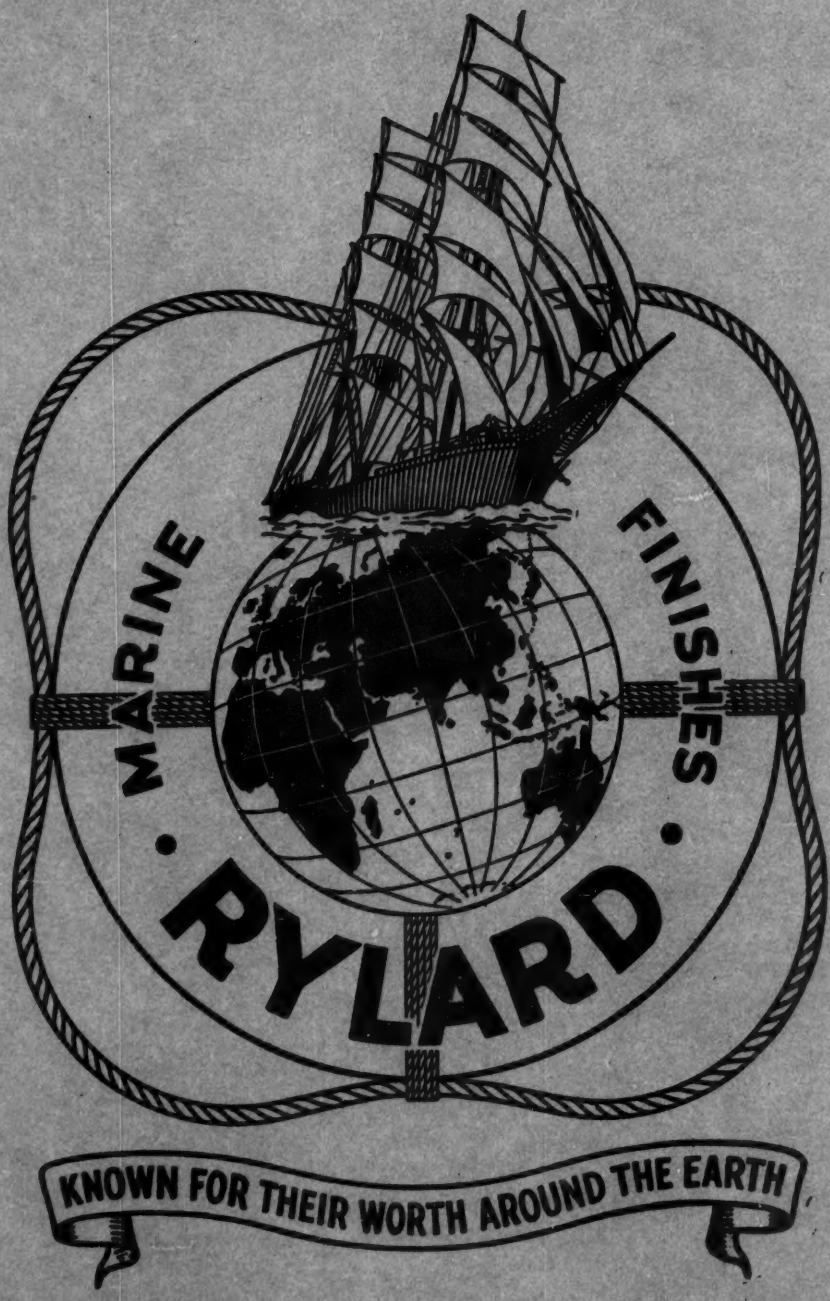
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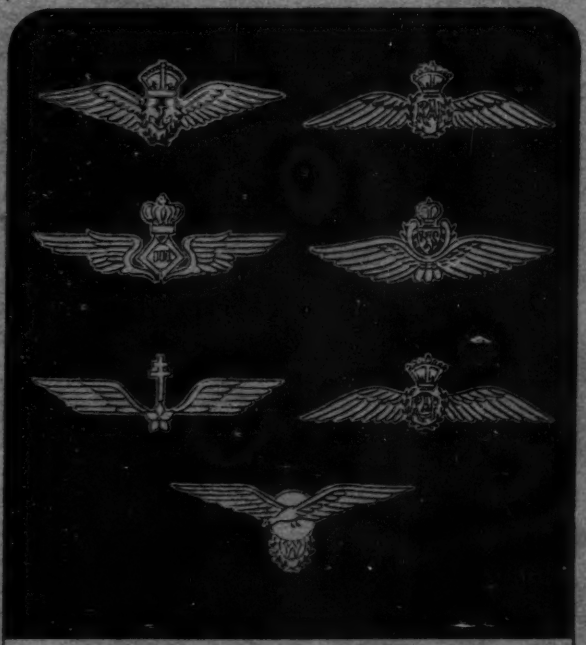

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